

**SMART**

*A Special Supplement to Sea&Shore 2008*

# RIDE

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**A  
SPECIAL  
LOOK AT  
MOTORCYCLING**



Back to Basics With

**Ben Spies**

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**A Special Supplement to Sea&Shore**

**Smart Ride** is a special issue magazine resulting from a close partnership with the Motorcycle Safety Foundation, a not-for-profit organization promoting motorcycle safety and awareness. This publication can never take the place of time, experience and practice on the roads. It is critically important that every rider take an approved motorcycle safety course and continue the training continuum throughout his or her riding life!

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# THE THRILL OF THE RIDE

## ***Stay Ahead of the Curve—and on the Road.***

**T**here's no doubt about it. Motorcycling has experienced a renaissance. Gone are the days when just the word "motorcycle" brought to mind ZZ Top look-a-likes with grizzled appearances and bad attitudes. Today's bikers are just as likely to be doctors, lawyers, Sailors, or Marines.

Whether you just bought your bike or have been cruising along for years, you're part of a growing number of people enjoying the benefits of motorcycle riding. The upside of biking includes better fuel economy, ease of maneuvering, and especially the choice pier-side parking spots for those of you stationed on ships.

Although benefits such as these, coupled with the invigorating sense of freedom motorcycles provide, is leading more and more people to purchase two-wheeled vehicles, the realities of riding a motorcycle remain unchanged. Successfully piloting a motorcycle is more involved than driving a car, and the consequences of being unsuccessful are far greater. For example, you don't have to worry about balancing a car at slow speeds or at stop lights. A motorcycle responds more quickly and precisely to your commands than a car. That means it's less forgiving of mistakes. Perhaps most important to keep in mind, a motorcycle is less visible than a car.

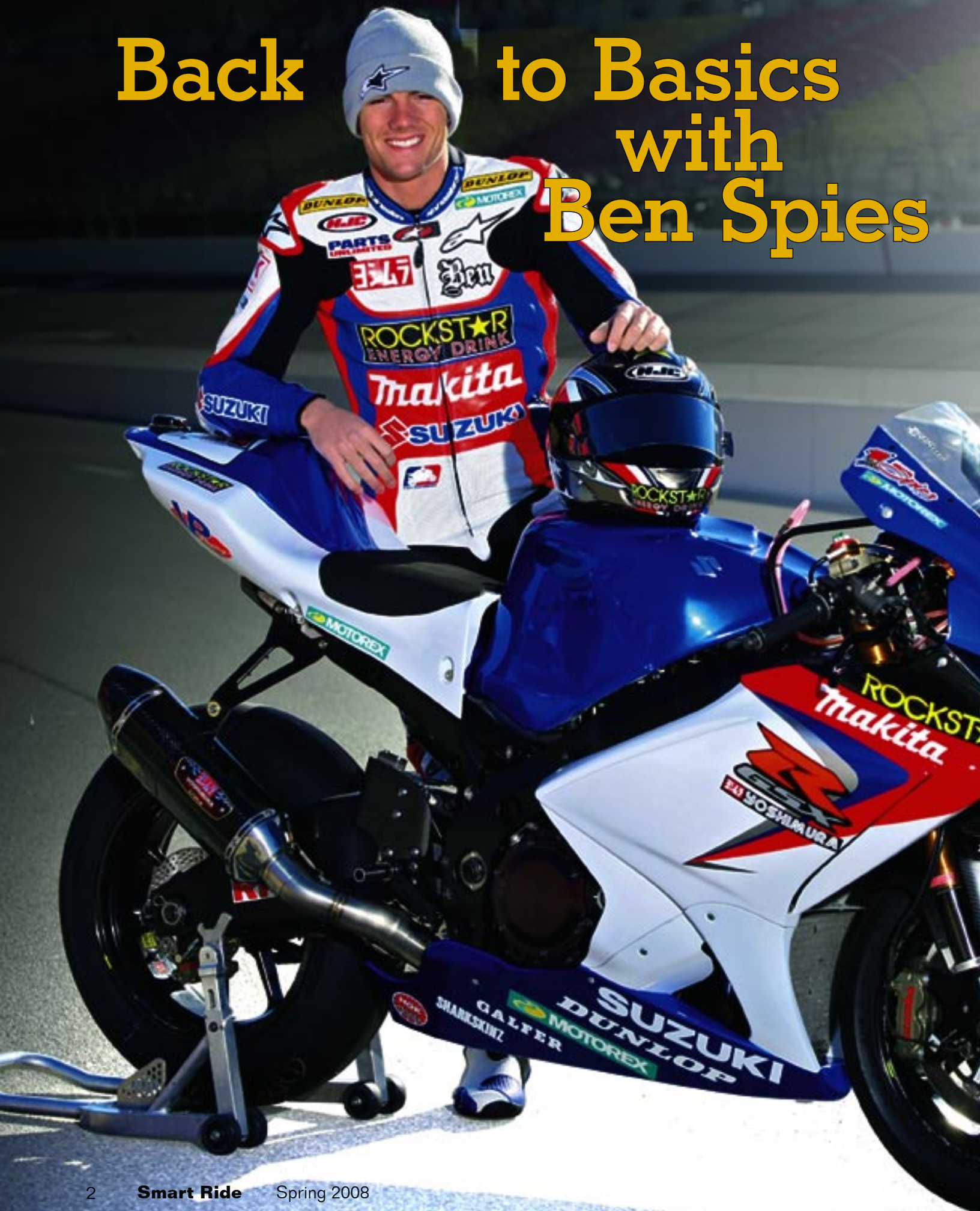
Some riders pride themselves about knowing everything about how their motorcycle works. Most new riders know considerably less. This magazine starts with the basics—the most elementary aspects of motorcycling, and moves on from there.

Training and awareness are the keys to success when riding motorcycles. Since 1973, the Motorcycle Safety Foundation has set the standard for rider education and training. Millions of riders have graduated from MSF's Basic or Experienced *RiderCourses*. They also partner with the Navy and Marine Corps to provide the necessary training to allow you to ride your motorcycle on base. Each year, nearly half a million newly-trained motorcyclists benefit by learning to manage the risks, ride within their limits, and become responsible, licensed riders. If you haven't taken the basic course, now is an excellent time to sign up. If it's been awhile, consider signing up for some upper-level training.

This magazine will address topics ranging from the all-important personal protective equipment to the differences between sport bikes and cruisers, but make no mistake, this magazine is not a substitute for attending an approved motorcycle-safety course and obtaining refresher training throughout your riding life. Learning never stops. However, until you take a course and afterward to add to the knowledge you gain from the hands-on training, you can use this magazine to reinforce your knowledge of how your bike works. It can also help you understand the basic mental strategies of motorcycle-safety awareness and risk management. This is just one more tool to help you stay ahead of the curve and on the road ... safely. ■

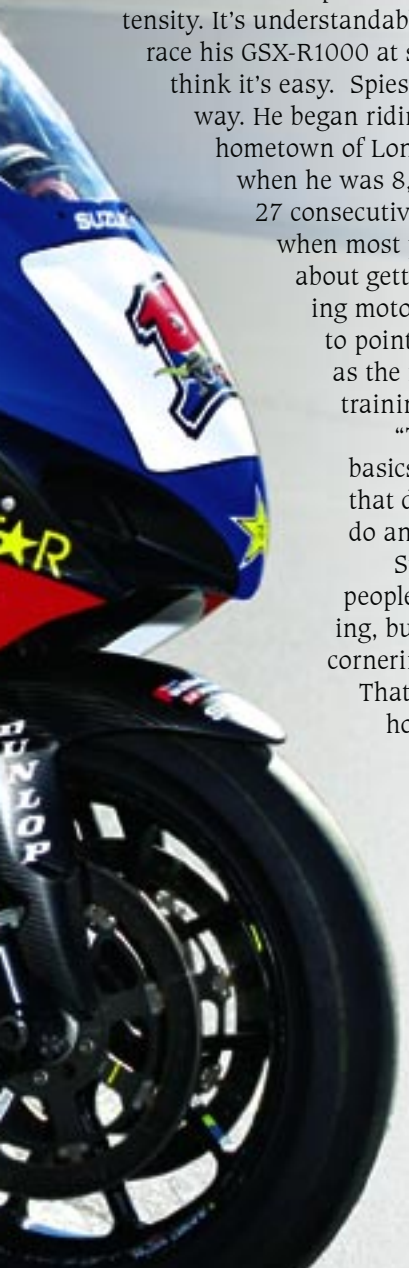


# Back to Basics with Ben Spies





By April Phillips



**T**hey don't come any faster than Ben Spies, and he's proud to say that his rise to the top of the motorcycle racing world is no fluke. He's won the AMA Superbike title two years running and he simultaneously won the AMA Superstock championship in 2007. He's 23 years old and at the top of his game as part of the Rockstar Makita Yoshimura Suzuki Factory Racing team – a team that also includes Mat Mladin, himself a six-time champion.

"We came into 2007 looking to win two championships," said Spies of last season. "I told myself that I wouldn't be satisfied with anything less than that."

This drive for perfection makes Spies train with intensity. It's understandable that fans who watch Spies race his GSX-R1000 at speeds up to 200 miles per hour think it's easy. Spies works hard to make it look that way. He began riding at the tender age of five in his hometown of Longview, Texas. He started racing when he was 8, and by the age of 10 he'd won 27 consecutive races. He turned pro at 16, when most people his age were more worried about getting driver's licenses than racing motorcycles. However, Spies is quick to point out that his success has come as the result of a lot of hard work and training.

"The most important thing is the basics," he said. "You have to have that down 100 percent before you can do anything else."

Speed may be what draws young people to the sport of motorcycle racing, but the basics of braking and cornering are what wins races, he said.

That's the point he tries to hammer home to his fans.

"I try to teach them that. I slow them down and show them how to perform the basic maneuvers," Spies said.

He also practices what he preaches. Spies has trained his body to act like an extension of his bike.

"It's what I know. It's second nature," he said.

That level of confidence could easily have been shattered back in 2003, when Spies hit the wall going 190 miles per

hour at the Daytona International Speedway. The accident wasn't his fault—his rear tire exploded during a Dunlop tire test. Even then, however, training took over. He was sliding on the pavement, headfirst toward the wall. He dug his left elbow into the ground to spin himself around and hit feetfirst. The injuries were intense. The friction of the slide causes some of his skin to literally melt. His left buttock was chewed to the bone, and there was a huge gouge in his shoulder. Still, Spies knows his gear is the only reason he's still around to race for championships.

"For sure, if I hadn't been wearing my helmet and leathers, I wouldn't be here," he said.

Spies said that in his years of racing, he's seen and been involved in plenty of wipeouts, and the gear always does its job.

"Usually, when we crash at 100, or 130, you get up and don't have a scratch on you."

It took a while for Spies to completely recover from his 2003 accident. The skills that he'd worked so hard to make second nature had been dormant for months while he endured painful bandage changes and mental anguish. He also had to adapt and change his riding position because of the injuries.

But he continued to heal, and he kept training, going back to the basics that paved his foundation in racing. Now, completely recovered and at the top of his sport, he occasionally goes back to work on the same skills he began building 18 years ago when he first hopped on the back of a bike. He is a firm believer that learning is a life-long process.

"You have to progress," Spies said. "I'm getting better every year. Even though we've won the biggest championship in America two years in a row, I still get better every time I get on the bike. I went pro at 16, but I didn't know half of what I know now."

Getting better is what it's all about for Spies. This year, he's planning on racing Superbike only, so he can concentrate on defending his title. He knows it won't be easy, especially with teammate Mladin equally driven to make it back to the top.

"Trying to win three Superbike championships in a row is really what motivates me," Spies said.

However, he knows that in order to do that, he can't afford any boneheaded mistakes. That's why he's always going back to basics.

"For sure, it's safety first for me. Always."

The 2008 season began March 5 in Daytona. Spies finished second to Mladin, but it's a long way until the season-ending race in Monterey, Calif., in September. Spies is in it for the long haul. ■

# NEW!

# MILITARY SPO



Photo by MCC David Rush. Modified.

By April Phillips

**T**here's no doubt about it. Sport bikes are sexy. They are sleek and colorful and built for speed. For Sailors and Marines, many of whom are naturally attracted to an adrenaline rush, this is a huge selling point. However, these same features make riding sport bikes much different than handling cruisers or touring bikes. Mishap statistics show it's important to take these differences into account. That's why the Naval Safety Center partnered with the Motorcycle Safety Foundation to create the Military Sport Bike Course specifically for sport bike riders.

"These bikes come with engines that are 600, 800, 900cc or even higher," said Dale Wisnieski, a motorcycle safety specialist at the Naval Safety Center. He also explained that these bikes have engines tuned for racing, are made of advanced lightweight material, and are highly maneuverable.

While they may be more maneuverable, they do ride differently than cruisers or other types of motorcycles. That's why this new training is so crucial.

"This course will teach cornering, braking and swerving, and other things necessary to get the most out of your sport bike," Wisnieski said. "Also, it gives insight on rider behaviors and perception."

Fleet concentration areas such as Norfolk, San Diego, and many other locations will begin teaching the course

June 1, 2008, and it will expand rapidly thereafter. The course includes classroom time as well as practical experience out on the range. The aggressive approach is due to the fact that so many Sailors and Marines are buying these machines without much riding experience.

"It's common for someone who has never been on a motorcycle of any type to fall for peer pressure or advertising pitches and buy a very expensive, very powerful bike," Wisnieski said. "If you buy one, sign up for this course immediately."

Statistics show that the increased number of sport bikes on the road has had an effect on mishap rates. The rise in sport bike popularity corresponds to a rise in motorcycle fatalities. In 2007, a majority of fatalities involved sport bikes, and as of the first half of fiscal year 2008, 100 percent of fatalities in the Navy occurred on sport bikes. The Naval Safety Center believes this new course geared specifically to sport bikes will help reverse this disturbing trend by giving riders valuable experience.

Many sport bike riders are young and haven't been riding long, but this isn't universally true. Aviation Electrician's Mate Senior Chief (AW) Calvin Stone, a 37-year-old who has ridden motorcycles off and on for more than 15 years, recently purchased a sport bike.

"I love the fact that it's so much lighter and more responsive than a larger bike, plus, who doesn't like the

# SPORT BIKE TRAINING COURSE

**“This isn’t your grandfather’s motorcycle safety course,” “This is exciting. The fleet asked for it because sport bikes are the bikes that they’re buying and riding.”**

speed when merging onto the highway or passing slower traffic?” he said.

Speed is the number one reason Sailors and Marines give when opting for sport bikes. ET3 Kevin Jordan, who rides a Kawasaki ZZR600, admits that’s why he bought one, even though he’d never ridden before.

Since purchasing his bike, Jordan has done the smart thing and taken riding courses. He said he’s always looking for ways to be a smarter motorcyclist and plans to take the Military Sport Bike Course as soon as it’s available.

The course will teach riders how to comfortably handle these high-performance machines, but Stone also recommends that those with a need for speed find appropriate venues.

“Take it to the track. There are many available where you can go for the day and ride fast in a controlled environment.”

The Naval Safety Center also recommends track days, but Don Borkoski, another motorcycle safety specialist,

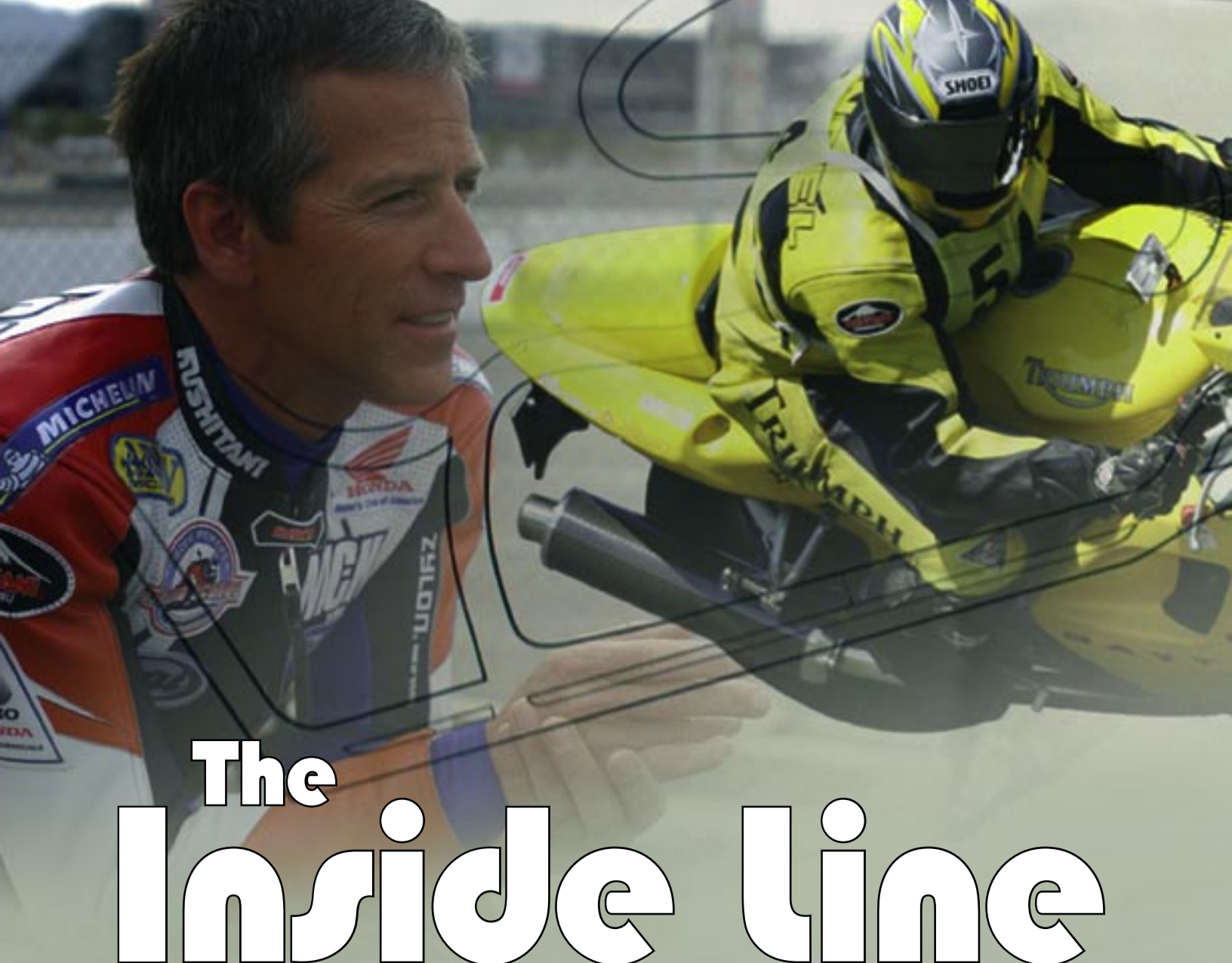
said many Sailors and Marines are buying bikes faster than those ridden by some racers.

“The typical racetrack bike is 600cc. The average Sailor is buying one that’s 1000cc or above. These bikes are great and can be a lot of fun, as long as you maintain awareness of the consequences of that kind of speed,” he said.

And ultimately, speed comes from your throttle hand. The responsibility lies with the rider, not the machine. Naval Safety Center motorcycle specialists like Wisnieski and Borkoski emphasize that they do not want to discourage Sailors and Marines from riding these types of bikes as long as they are trained.

“This isn’t your grandfather’s motorcycle safety course,” Wisnieski said. “This is exciting. The fleet asked for it because sport bikes are the bikes that they’re buying and riding. We listened and designed the training specifically for them and their needs. We really believe this is going to go a long way toward improving the success rates for sport bike riders, keeping them on the road and out of the hospitals or morgues.” ■





By Nick Ienatsch

**N**ick Ienatsch is the author of *Sport Riding Techniques* and the lead instructor at the Freddie Spencer High Performance Riding School. He is involved in the Military SportBike RiderCourse and most importantly, wants to thank each and every one of you for your service to our country.

**Trail Braking: On the track to win, on the street to survive.**

Many "riding experts" feel trail braking is an advanced technique that beginning riders shouldn't worry

about. I don't agree. It's the new, low-mileage riders who are crashing the most, and the main reason they crash is too much speed at the corner entrance, or as I put it, a lack of control at the corner entrance. The brakes are a control, and riders who crash rush into the corner without this control on. So wherever you are in your riding career, study this column. Keep it with you for the next few weeks and review it before and after rides. Riding improvement happens in your mind when the bike is sitting still and I encourage you to work hard at your riding because mistakes can be catastrophic. Riding well is difficult; riding poorly





Photos by Dan Steber. Modified.

is easy and painful.

Trail braking will soon reveal itself as the secret to outright speed on the racetrack, but more importantly, the secret to consistent street riding at any pace, on any bike. A final point: An expert rider's touch on the front-brake lever is much, much finer and lighter than you realize.

How can the fastest roadracers win races? If they're going faster than everyone else, shouldn't they crash more frequently? Sure, Ben Spies sets track records, but he collects championships by finishing races. Lesser riders try to match the champion's pace but crash trying. Amateur racers come to the same track and crash while pushing to get within six seconds of the champion's lap time. How can this be?

The confused "safety experts" in this country would have everyone believe that speed and safety are mutually exclusive, but racing tells us a com-



Photo by Dan Steber. Modified.

pletely different story. In racing, we find the fastest riders are often the least likely to hit the ground. Much of this can be explained by unique natural abilities, such as eyesight and balance, or put down to a superior machine. But there is one aspect of their riding that will help every street and track rider in the world: The champions realize that every corner has a slow point.

It doesn't matter how long they dirttracked, who their daddy is, how old they are, what they eat, or how they train... the fast guys know that each corner has a point where the bike must be going a certain speed. Arrive at this particular point with too much speed and the bike runs wide or crashes. Arrive with too little speed and you're gonna get beat. The best riders have the ability to arrive at a corner's slowest point closer to the precise speed the chassis can handle. This ability makes them faster than the rider who over-slows his/her bike at the corner entrance, and more consistent than the rider who carries too much speed into the corner.

And this ability is called trail braking. You need to learn it... on the track to win, on the street to survive and fully enjoy this sport.

The term trail braking refers to the practice of trailing some front-brake pressure into the corner. Or you can think of trailing off the brakes as you apply lean angle.

There are two extremely important reasons to trail your brakes into the corner, but before we get to that, understand that the majority of your braking should be done before you tip your bike into the corner. Don't get confused and believe that you are going to add brake pressure as you add lean angle. Just the opposite: You want to give away brake pressure as you add lean angle because your front tire can only handle so much combined braking and lean angle. I explain it with a 100-point chart in my book "Sport Riding Techniques," writing about a front tire that has 100 total points of traction divisible between braking and cornering. As we add lean-angle points, we give away braking points. I've heard of riders believing that trail braking means running into the corner and then going to the brakes. There are some corners with that type of layout, but most corners require brake application well before turn-in. I think the point will become clear as we delve into why we want to trail brake.

We want to trail brake to control our speed closer to the slowest point of the corner. The closer we get to that point, the easier it is to judge whether we're going too fast or too slow. If your style is to let go of the brakes before turning into the corner, understand that you're giving up on your best speed control (the front brake) and hoping that your pre-turn-in braking was sufficient to get your



speed correct at the slowest point in the corner. If you get in too slow, this is no big deal. The problem comes when the rider's upright braking doesn't shed the required speed and suddenly the rider is relying on lean angle to make it through the surprisingly tight turn, or to get under the gravel patch, or to the right of the Chevy pickup halfway in his/her lane.

We don't crash on perfect days with perfect pavement and perfect tires. We crash when something unexpected crops up—the gravel, the truck in your lane, or the water across the road mid-corner. If you've entered the corner with no brakes, then you've basically reduced your options to attempting to reapply the brakes when you see the unexpected surprise, adding lean angle, or standing the bike up and running off the road. You need to make a habit of turning into corners with just a little brake pressure because the unexpected is much easier to deal with if your brake pads are already squeezing your discs. You will be in control of your speed and as your speed drops, your bike will be able to carve a tighter radius at the same lean angle.

If you're sitting there thinking, "This guy doesn't know what he's talking about, my bike stands up when I grab the brakes mid-corner," I'd have to say you're right. Abrupt braking mid-corner will collapse the fork and make the bike stand up. Remember, trail braking is a light touch on the brakes, not a grab. Think of trail braking as fine-tuning your entrance speed. The big chunks of speed are knocked off while straight-line braking.

Makes sense, doesn't it? This sport should make sense to you. If someone tells you something that doesn't make sense, ask questions. If it still doesn't make sense, quit listening. In this case, I'm telling you it's easier to judge your speed the closer you get to the slowest point in the corner. Your best speed-setting device is your front brake, so use it as you turn into the corner. All corners? No, don't make this math. Corners differ and your techniques must differ to deal with them. But the majority of corners have their slowest point somewhere after the turn-in. Find that point and trail the brakes closer to it.

The second reason you need to trail brake is because you can actually improve your bike's steering geometry, helping it turn better. A slightly collapsed front fork tightens the bike's rake and trail numbers and allows it to turn in less time and distance. Tighter steering geometry is one reason a sport bike turns better than a cruiser. Rather than let go of the front brake before the turn-in, keep a bit of pressure on and you'll immediately feel the difference.

Let's again study the rider who gets all his/her braking done before the turn-in. As the front brake is released, the fork springs rebound, putting the bike in the worst ge-

ometry to steer. As this rider works within this technique, he/she will attempt to turn the bike quicker and quicker, trying to make up for the extended steering geometry with more and more aggressive steering inputs. The faster they ride, the wider the bike wants to run through the corners, so the harder they'll try to steer. This rider will be forced to use more and more lean angle in an effort to "scrub off" speed with the front tire. Aggressive steering inputs and lots of lean angle... a recipe for disaster.

If we could convince this rider to stay on the brake lever a little bit longer, that lengthened brake pressure would tighten the steering geometry and the bike would turn better. It would carve a tighter radius sooner in the corner. It would take less lean angle. It would reduce the need for aggressive steering inputs, and anyone who does this sport well realizes that aggression with the brakes, throttle and lean angle can get painful. Fast guys load the tires smoothly, whether accelerating, braking or turning. Forget the "flick."

Time for a real-world example. I've worked at the Freddie Spencer High Performance Riding School for 10 years, and in addition to sportbike training, we've had the chance to host groups of cruiser riders several times in those years. Over a period of 10 days last year, almost 800 riders had a chance to ride a variety of motorcycles on the track and one of the two main points we stressed was the use of the brakes. Keep in mind that some of these riders had never even used the front brake, having heard from an uncle or neighbor that the rear brake was the one to use. On a long-wheelbase cruiser, the rear brake is quite effective, but mastering the front brake is still the secret to bike control. Some of these guys had ridden for more than 30 years and were amazed at how much more bike control they had when they mastered the front brake. They were able to ride at a quicker pace than expected because they gained the confidence of slowing and turning their bikes at the next corner.

Let's look at one more real-world example: MotoGP (or World Superbike or 250GP or AMA Superbike, pick your favorite). All those guys trail-brake, and do you know why? It's faster and safer. Get in front of your TV and watch how long they stay on the front brake. They're champions because they carry as much speed as possible to the slowest point in the corner (and as much speed as possible from the slowest point, but that's another subject). It's not just about speed; it's about finishing tire tests, practice, qualifying, and the race. Crashing is disastrous for street riders and equally problematic for racers who want a contract next year. Trail braking is about safety on the street and consistency on the track. It makes sense. You need to do it. ■



# I Am Lucky To Be Alive...

Photo by Dan Steber. Modified.

By April Phillips

**S**ometimes, it's the small things that make all the difference. For GM1(SW) James Isaak, a Minot, N.D., native stationed at the Navy Munitions Command Detachment Sewells Point in Norfolk, the things that make life worth living are his new wife and the home they are making together. They dream of having a baby someday soon.

Although Isaak is only 24 years old, he's had a very successful career so far. Enlisting in the Navy right out of high school, he attained the rank of first class petty officer in less than five years. Because he treasures his personal and professional success so much, he's acutely aware that he nearly threw it all away four years ago.

"I'm really lucky to be alive," he admitted.

Four years ago, after returning from a two-month at-sea period, Isaak decided to buy a motorcycle.

"I loved sport bikes, but I had no riding experience," he

said. "I had no license, but at the dealership, they told me if I could come up with the money to buy it, I could drive it off the lot."

Since he'd recently spent time at sea, Isaak had a little money in his pocket. He was able to obtain a loan for the rest and purchased a Honda CBR 600. A friend taught him some of the basics of motorcycle operation, and he began riding around in parking lots, trying to get acclimated.

"Then I started to get bold," he admitted.

Isaak took the bike out on the street and his speed



began to creep up. After stalling out at a traffic light, the bike went down, and he busted the rearview mirror and cracked the headlight.

"They always say that you'll put the bike down once, and I figured I'd gotten it out of the way," Isaak said.

In four months, he'd put a couple of hundred miles on the bike. He also dropped the motorcycle one more time and still hadn't taken the Motorcycle Safety Foundation's Basic *RiderCourse*. However, he was feeling more confident and itching to see how fast his bike could go.

"I wanted to go riding with the guys. I remember I was sitting at a gas station in Virginia Beach, and a bunch of experienced riders rode by," he said.

They stopped and asked if he wanted to tag along.

"I wanted to be that guy. I wanted to do the things they were doing. They were doing stunts and other cool-looking things. I decided to give it a try, but they started speeding up. I was nervous, but I wanted to look cool so I tried to keep up," Isaak said.

He soon realized that he didn't have the skills to be riding with these people, but his pride wouldn't let him slow down and break off from the group. Isaak admits that peer pressure led him to take some risks that he wouldn't have on his own.

"We went really fast through tight, narrow curves. Then I saw the trees coming at me and slammed on the brakes. I got bucked off my bike just like a horse," he said.

It might sound like a cliché, but Isaak said he really did see his life flashing before his eyes. He was lucky that there were no oncoming cars. He ended up with little more than a few bruises and some scratches. He was wearing all the proper personal protective equipment and credits this with saving his life. However, all the PPE in the world doesn't help an inexperienced rider make solid decisions in a split second. Isaak knows his crash could have been avoided if he hadn't pushed the limits beyond his skill level.

"Those statistics you see – I could easily have been the one who died," he said, his voice cracking with emotion. "I got married last year, and my wife and I are buying a house. We're thinking of having a kid. I could have lost all that with one stupid mistake, but this is my second chance."

Isaak feels like a man with a new lease on life. He's determined to make the most of his second chance. He has some advice for others who see the sport bike groups on the roadways and think they can do the same stunts at the same speeds.

"Get the training. Think before you do it, and most importantly, be real with yourself." ■



Cartoon by Ricardo Nunes.

## Motorcycling:

Maximum fun requires  
maximum preparation.  
Hone your skills.



# The Road Rash Queen

By April Phillips

**B**rittany Morrow was 22 years old when she hopped on the back of her friend Shaun's Suzuki GSX-R750 back in September 2005. She was planning to join the Marine Corps and had her heart set on becoming a combat correspondent. She also loved riding and considered herself an experienced passenger. She was excited to be on a sport bike—even if it was as a passenger.

To prepare herself, she put on a pair of sunglasses and shed her cowboy hat for an oversized helmet. She donned a pair of Capri pants and a sweatshirt over her bikini.

"I thought nothing of the fact that I had practically no protection against the asphalt if anything were to happen. I figured that we couldn't get into a wreck. It simply wouldn't happen to me," Morrow said.

Forty-five minutes into the ride, Morrow wished she'd been a little more thorough when choosing her personal protective equipment.

"I started to slide back on the seat and felt the cool air fill the small space between my chest and Shaun's back. I felt a rush of wind hit my face like a brick and our bodies separated," she said.

The force of the wind ripped her off the seat in an instant. Soon, she was grinding across the surface of the highway, and Morrow said she felt every single inch of the 522-foot tumble.

"I didn't lose consciousness, but I remember wishing that I had," she said. "I knew this was far worse than anything I had ever gone through, and I was convinced I would not live to see the next day," she said.

Morrow spent the next two months in a hospital. She had third-degree road rash-burns covering 55 percent of

her body. She lost half of her left breast. She severed the tendons in her left pinky finger and dislocated her right big toe. The accident also caused indirect health problems. She lost a lot of blood and ended up contracting pneumonia. She suffered a blood infection, a blood clot on one of her legs, and an adverse reaction to one of her three blood transfusions.

"My road rash was so severe that my skin was not going to grow back on its own. I had lost too much surface area for the doctors to simply suture me together and send me home. My thighs were the only two places that had not received any abrasions," Morrow described.

In order for her open wounds to heal, the doctors had to cut off a thick layer of healthy skin from her thighs, place it over her burns and surgically staple the new skin in place. There wasn't enough skin on her thighs to graft all the wounds at once, so the doctors had to choose which areas to repair first and which had to wait. As a reaction to medication, her long, blond hair fell out.

It's been nearly two and a half years since Morrow fell off that motorcycle. She knew the physical healing process would be a long, tough journey, but she also realized that she had some emotional scars.

"My heart felt heavy, knowing something I loved so much had almost cost me my life," she said.

That's when Morrow decided that she had to get her own motorcycle and ride again. She's now a trained and licensed rider. She owns two motorcycles—a Yamaha R6 and a Honda CBR600F4i. She takes part in track days and is learning to stunt ride. What's even sexier is that Morrow works on her own bikes. This time, she's doing it right.

"Riding prepared for the worst possibilities will always help protect you from injury in even the smallest wreck. I believe that wearing gear is an attitude that can save your life. Accepting the risk before you even swing your leg over your bike and protecting yourself in case it happens will make you ride smarter and safer and might even prevent an accident altogether," she said.

Morrow is a protective apparel spokesperson and has also purchased the rights to TheRoadRashQueen.com, an online forum where she can share her experience and urge others to always wear the proper gear. She travels the country telling others how to protect themselves. She enjoys taking her message to the military, because she feels grateful to give something back to those who protect America.

"Protect others by protecting yourself," she said. "Ride with the attitude that you are needed so desperately by those around you, including your country. You can't afford to risk riding without your gear." ■



# Crashes Don't Care About Rank

## Everyone Benefits from Training

By April Phillips

**R**ear Admiral Christopher J. Mossey, Commander, Naval Facilities Atlantic, has been riding motorcycles for a long time. He first began learning how to ride in high school, and when he was a sophomore at Cornell University in upstate New York, he bought a brand new 1979 Honda Hawk. He zipped around campus and even took extended trips in the cold to visit a girlfriend 90 miles away. He thought he knew plenty about riding, but when he was commissioned into the Navy in 1981 and then stationed in San Diego, he wasn't allowed to ride on base because he didn't have a documented training course.

"San Diego was the perfect climate to ride a motorcycle, and I planned to ride it to and from work, so I had to take an MSF course. I'd been riding for three years in college, and I thought I knew all there was to know about motorcycle safety," Mossey said.

He sucked it up and took the course, and he said it surprised him.

"I became a much safer rider," he admitted. "Just because I could ride a bike and drive a manual car didn't mean I could safely ride a motorcycle."

He learned that most accidents happen at intersections and that the motorcyclist is often not at fault.

"A lot of drivers don't see you. They're not expecting to see you, so you just don't register. They're expecting a big blue minivan, not a motorcycle," Mossey said.

Now he has the opportunity to pass the wisdom of his nearly 30 years of experience down to a junior officer – his aide, Lt. Jennifer Steadman-Murphy. When Murphy was deployed to Sasebo, Japan, last year, her name was placed into a raffle when she contributed to the Combined Federal Campaign. Her name was drawn, and she's now the proud owner of a new Harley-Davidson Sportster.

A Harley Sportster is a dream bike. Many motorcycle enthusiasts salivate at the thought of hopping on and twisting the throttle, but Steadman-Murphy has kept a level head.

"It's delayed gratification. I go look at my beautiful, shiny, red motorcycle, but I'm not legal," she said.

Steadman-Murphy rode motorcycles briefly when she was in college, but several people she was close to were involved in accidents—one was killed. It was enough to make her stop riding for awhile. When she got her new Harley back in October, she said she was excited about riding again but smart enough to realize that she wasn't ready to just hop on and ride off into the sunset. The Motorcycle Safety Foundation always stresses that skills are



perishable. Steadman-Murphy had never been a really confident rider to begin with, so she knew she needed training before she could ride safely, not to mention legally.

"I haven't ridden in so long that, by now, I'm a rote amateur, and I treat myself that way," she said.

Even though her job as Mossey's aide keeps her busy and traveling all over the world, Steadman-Murphy decided to hold off on riding until she is able to enroll in not one, but two safety courses. The first she plans to take is through the Commonwealth of Virginia. For this, she will ride a small loaner bike and relearn the basics of motorcycle operation, such as clutch and throttle techniques and cornering and braking. She'll get licensed through this course, as well. Since she's changing duty stations soon, Steadman-Murphy signed up for an MSF course that she'll take on her Harley once she moves. It doesn't hurt one bit that her new duty station is in Hawaii – the perfect place for motorcycles. Her husband, who has taken both the Virginia and Navy MSF courses, has already left for Hawaii and took the bike with him.

"It's there for him to ride and maintain. He's taking good care of it," she said.

Mossey and his aide have had plenty of opportunities to talk about smart riding, including personal protective equipment. Both have chosen to wear full-face helmets.

"You don't get bugs in your teeth," said Steadman-Murphy. Mossey agreed.

"If you get hit by a bug when you're driving down the highway, it hurts!," he said. "Also, I wear contact lenses, and the full-face helmet blocks the wind and doesn't irritate them."

All this talk has Mossey ready to get his motorcycle out of the garage and back on the highway. He's kind of partial to his bike. He's still riding the same 1979 Honda Hawk he bought in college nearly 30 years ago. ■

***THE RIGHT PLACE FOR***

# **SPEED**

By April Phillips

**L**et's face it – part of the reason so many people love riding motorcycles is because of the potential to go fast. Yet, we also know that speed is often a factor in crashes. So how do you balance the adrenaline rush of going really fast with the level-headedness needed to remain in one piece?



Photo by Dito Milan



For many Sailors and Marines, the answer is to take it to the track.

Aviation Electronics Technician First Class (AW) Hoge Young, currently stationed in Atsugi, Japan, rides a 1999 Honda CBR900RR. When he was stationed at Point Mugu, Calif., he started going to a coffee shop that was a hang out for local bikers. The shop organized occasional track days for the group.

"Many riders in California told me that taking my bike to the track was the best way to gain skill," Young said.

His first track session was in 2005, and he said he's seen massive improvement in both his form and technique. Riding on the track allows him to go fast in an environment where it's safe and legal to do so.

"There are no oncoming cars, animals, gravel, oil slicks on a blind corner, and no cliffs to go over or trees to hit if I run off course," he said.

Wendell Dunn is the traffic safety manager for US-NAF Atsugi and he's also an MSF *RiderCoach*. Five years ago he purchased a Triumph Daytona 955i and fell in with a group of riders who raced motorcycles or took their bikes to track days. At first, he went just to watch but soon felt the need for speed. He goes to the speedway several times a year and agrees that it provides the opportunity for riders to improve their abilities in relative safety.

"The primary skills that most riders lack are braking and cornering skills. Going fast in a straight line is easy, but getting the bike back down to an entry speed takes some practice. Nice, easy braking won't get the job done. If you're going to ride at a hundred miles per hour, you need to be able to stop from a hundred miles per hour. Then there is cornering. Typically, an outside-inside-outside path of travel will get you through a corner in the shortest amount of time," Dunn said.

Learning techniques such as these takes practice. Young said new track riders are often concerned about leaning at extreme angles.

"Learning to lean and how far you can actually lean may amaze you," Young said.

Dunn explained that there are three typical ways of riding on a track. The first is a free track day, usually sponsored by a tire manufacturer.

"The drawback to a free track day is that the riders have varying skills, from very good to extreme novice," he said.

The second method is to attend a class and get a track license. A license is usually for a particular track,

and with it a rider can sign up for sessions arranged by skill level. The third method, known as a riding party is Dunn's favorite, even though it tends to be the most expensive.

"I prefer the riding party because of the regimentation. There are three distinct groups: novice, intermediate, and expert, or as I like to say: the slow guys, the fast slow guys, and the fast fast guys."

These sessions last all day and usually include lunch.

It's important to remember that just because it's safer to ride at high speeds on a track, rather than on the street, there is still some risk involved.

"I have been to six track sessions, and yes, there are crashes at every one," Young said. "But even with the high speeds, the goriest injury I saw was a rider needing minor medical attention for an abrasion on his arm. His crash might have been much worse had it occurred on the street. Most serious injuries are not from the rider sliding on the road, but from impacting an immovable object."

Young said that his experience on the track has helped curb his need to ride at excessive speeds on the street.

"After traveling at more than 150 miles per hour on the front stretch of Willow Springs Raceway, I have no desire to try that anywhere but a track. A race track has a wider road surface, and you can use every inch of it. That wide track surface is also inspected before the riding starts, swept clean of debris, and in good repair," he said,

There's another thing Young loves about riding on the track: He loves dragging his knee.

"Dragging a knee is an important milestone to a sport rider. It's an awesome feeling to hang off the bike, stick a knee out, and lean the bike over and touch the macadam," he said. "I am allowed to explore my limits while operating the machine in its native environment as this is what it was designed to do while dragging my knee. Did I mention dragging my knee?" he added with enthusiasm.

However, he wouldn't think of doing it on the street or without the tough gear that protects his knee and the rest of his body. Young was involved in a few minor crashes when he was stationed in the United States.

"My bike and my pride were damaged more than by body because my PPE worked." ■

*For more information on locating tracks in your area, contact your nearest base safety office or Motorcycle Safety Foundation RiderCoach.*

# WIPEOUT

## at 75 MPH



By April Phillips

**A**viation Structural Mechanic Third Class Justin Clark, stationed at Carrier Airborne Early Warning Squadron 116, was like a lot of young Sailors and Marines who purchase motorcycles. He wanted to go fast. In March 2007, he bought a motorcycle that could help him accomplish that – a used Suzuki GSXR-750. He had no past experience with motorcycles, but he got a loan from the bank and was able to purchase the bike. The very next day, he was out on the roads and logged a hundred miles.

One thing Clark didn't have was the Motorcycle Safety Foundation's Basic *RiderCourse* under his belt. He thought it would be a hassle to take the course and figured he could learn on his own.

"A buddy of mine found out I'd bought a bike and called to see if I wanted to ride," he said. "He didn't know that I didn't know how to ride yet, and I didn't tell him."

Clark, who is stationed in Point Mugu, Calif., soon found himself riding down the scenic Pacific Coast Highway.

"I remember thinking to myself, 'Man, this is amazing!' I had never done anything like that before," Clark said.

With speeds creeping up toward 150 miles per hour, Clark was finally experiencing the adrenaline rush he was hoping for. However, he got more than he bargained for when he drifted across the centerline into oncoming traffic. Clark said he'd been going into a sharp curve at 90 miles per hour and had only slowed down to about 75 when he swerved into the shoulder and lost control.

"It happened so fast," he said. "I did a bunch of flips

and rolls, and the next thing I knew, I'd landed against the side of the mountain," he said.

Clark got up immediately, and at first, he thought he was ok. Actually, he was in shock, but he refused an ambulance ride.

"I hadn't completed the safety course, and I knew it was a requirement. I didn't want anyone to find out," he said.

Clark and his friend loaded his bike onto a truck, and that's when the full extent of his injuries hit him. He felt a little woozy and decided to go to the hospital after all. He had a nasty gash in his arm that needed to be stitched up, but thanks to the fact that he was wearing all the required personal protective equipment, Clark had no serious injuries.

His cuts and bruises stung, but so did the price tag for getting his bike repaired. He paid \$4,000 to buy the motorcycle and had to pay an additional \$2,000 to get it back in good working order.

The accident didn't keep Clark off his motorcycle, but it did make him a lot smarter about how it went about riding it. He did what he should have done before he even purchased his bike and took a motorcycle-safety class.

"I learned a lot of amazing things," he said of the course. "I think everyone who rides or is thinking about riding should get the safety course completed."

Clark said he rides his motorcycle every day, but since the accident, he's learned to keep his need for speed in check. He wants to take more advanced rider courses and plans to take his bike to the track next time he feels the need to go fast. ■



# S·M·A·R·T Training = Smart Riding

By April Phillips

**T**here's a mantra in the Navy and Marine Corps that says "Train like you fight." It means a general quarters drill will seem as close as possible to an actual shipboard emergency. It means that aircraft launch from a flight deck the same way in training as they do when they're loaded with live ammunition. This philosophy applies to off-duty activities as well. The Motorcycle Safety Foundation (MSF) recently visited ships in Norfolk, Va., with the Safe Motorcyclist Awareness and Recognition Trainer (SMART), a new tool to help motorcycle riders react to a number of dangerous scenarios they will encounter when they're out in traffic.

The machine is basically a high-tech video game, with

handlebars and controls just like those on a real motorcycle. "Riders" look at a screen depicting likely roadway scenarios, and their actions at the controls affect what occurs on screen.

The SMART, manufactured by Honda, is not a simulator, explained Al Hydeman of MSF.

"It doesn't lean like a motorcycle does. We can't teach riders how to counter-steer or operate their bikes. That's what the *RiderCourses* are for, and they do a great job of teaching people how to ride safely in a parking lot or other controlled environment. This takes them into traffic."

Electronics Technician Third Class Kevin Jordan has been in the Navy just over two years. He's stationed

onboard USS *George Washington* and recently had the chance to try out the SMART when Hydeman and the Naval Safety Center took the trainer onboard the carrier.

"It makes you think and puts you through scenarios such as pedestrian crossings and vehicles that don't see you coming," he said.

Jordan has been riding his Kawasaki ZZR 600 for about a year and a half. He's one of many military riders who bought their bikes without any prior training.

"When I bought my bike, it was the first time I'd ever even been on a motorcycle or a dirt bike, or anything like that," he said.

He believes the SMART would be beneficial to Sailors and Marines before they purchase a bike.

"It helps you with your thought process and muscle

memory and getting used to the feel of the controls. At first, it can be overwhelming, even without the traffic."

Hydeman understands this, and said it's better to be overwhelmed at the controls of a video monitor than on real roads, at real speeds.

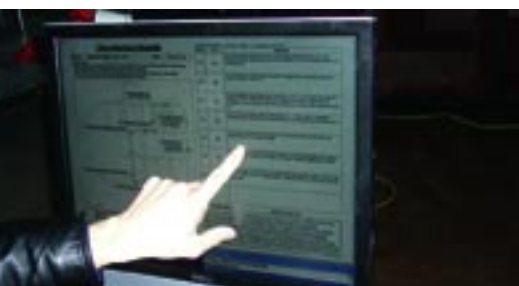
"A lot of people say, 'I hope I don't crash' when they use SMART. I say, 'I hope you do crash' because that's how you learn and here the only thing that really crashes is the ego," Hydeman said.

He went through a test ride with Aviation Ordnanceman Airman Mark Gentle, another *George Washington* Sailor. After Gentle completed his first ride on the SMART, Hydeman was able to go back through it with him, replaying all the dangerous scenarios that

occurred. One benefit is that SMART allows you to change perspectives when it's switched into coaching mode. In one scenario where a car pulled out directly in front of the motorcycle, Gentle was able to realize that the motorist couldn't see him. This is important, because part of the danger of motorcycles is that they're far less visible than cars and defensive



AI Hydeman of the Motorcycle Safety Foundation coaches ET3 Kevin Jordan, stationed onboard USS *George Washington*, after he completed a SMART ride.



SMART's video monitor breaks down all the training opportunities that occur during the ride and grades the trainee. Hydeman is able to explain how the scenario might have been managed more safely. He can also show riders where their strengths lie.



Photo by Dan Steber.

driving is that much more important for two-wheeled riders.

The coach gets a printout of the ride, so he or she can tell how fast the motorcyclist was going, whether their stops were smooth or abrupt, whether the turn signal was used, and many other important aspects of safe riding.

"Using the coach controls, we can show him how to maneuver more safely and then put him into a second, more challenging ride, based on his needs."

Gentle scored an overall 'A' on his ride, performing very well. He's been riding for four years, but said he still learned something important from using SMART.

"You can't assume anything out there on the road. This is good for raising awareness."

Each Honda SMART costs about \$5,000, and the Naval Safety Center is considering purchasing several to use during safety fairs and stand downs throughout the fleet. ■



# BASIC

## Basic Riding Skills

**Y**ou've got your brand new bike. You hop on and catch a glimpse of yourself in your matching candy apple red jacket and shiny helmet. Admire yourself. You know you look good. Now take a second to imagine what you'd look like with some angry red road rash—Not so hot. Now is not the time to just climb on and twist the throttle. Nothing but lots of practice is going to make you a competent motorcyclist, but here's a refresher on the basic controls and procedures to make your motorcycle go and stop when you want it to.

### Controls

**Throttle** – Located on the right handgrip, it controls engine speed. Use your right hand to roll the throttle on, with the top of the grip rolling toward you, and off, with the top of the grip rolling away from you. If released

completely while rolled on, the throttle will spring back to the idle position.

**Clutch Lever** – Located in front of the left handgrip, it connects power from the engine to the rear wheel. Use your left hand to squeeze the clutch lever toward the handgrip to disengage power. Release the lever slowly away from the handlebar to again engage power to the rear wheel.

**Gear Shift Lever** – Located in front of the left footrest, it shifts the transmission from one gear to the next. Lift the lever with your left foot to upshift one gear at a time; press the lever to downshift one gear at a time. The lever operates as a ratchet mechanism: after each shift, the lever returns to its “home” position. The typical gear shift pattern, from the bottom to top, is 1-Neutral-2-3-4-5-(6). Your bike may or may not have a sixth gear.

**Front Brake Lever** – Located in front of the right handgrip, it operates

the front wheel's brake. Use your right hand to squeeze the lever toward the handgrip to apply the brake.

**Rear Brake Pedal** – Located in front of the right footrest, it operates the rear wheel brake. Press down with your right foot to apply the brake.

**Fuel Supply Valve** – Usually located on the left side underneath the gas tank, it controls the flow of fuel to the engine. Fuel supply valves differ, but often include on, off, reserve, or prime positions. Not all modern bikes have manual fuel supply valves.

**Ignition Switch** – May be located in or near the instrument pod in front of the handlebars, or in some cases on the left side below the seat. Common key positions are on, off, park, and lock.

**Choke** – May be located near the left handgrip, below the instrument panel, or below the left side of the gas tank. Put the choke on for cold starts, then off once the engine has warmed up. Some fuel-injected bikes



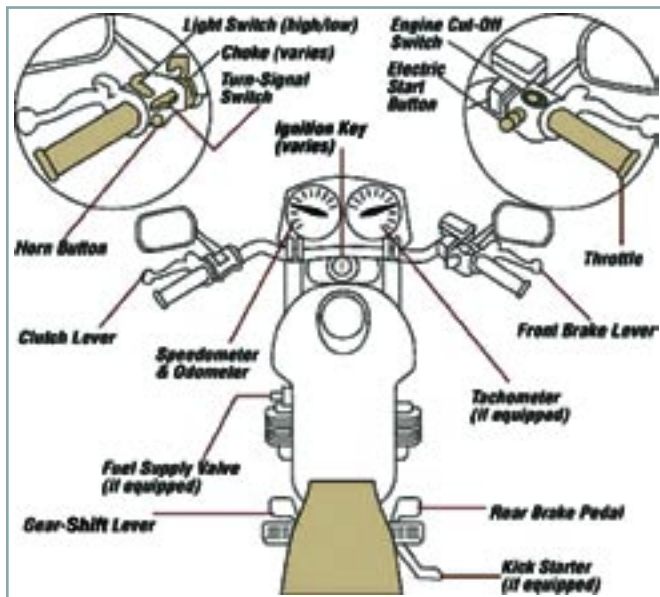
The four-fingered clutch technique.



Above: Twisting the grip adds throttle. The lever operates the front brake. Bottom: The right foot pedal operates the rear brake.



Make sure the engine cut-off switch is in the “on” position, turn the key, and press the “start” button, which is usually situated below the engine cut-off switch.



don't have a choke.

**Engine Cut-Off Switch** – Located near the right handgrip, it shuts off the engine immediately. Use your right thumb to move it to the run or off positions.

**Electric Start Button** – Located near the right handgrip. Use your right thumb to press the button to start the engine. (Be sure to hold in the clutch lever as you do so.)

Additional controls and equipment include the high/low beam headlight switch, turn signal switches, the horn button, speedometer and tachometer, and indicator lights for neutral, high beam, turn signals, and oil pressure. In some cases, the bike may also have a kick starter.

## Mounting the Motorcycle

Mount the bike from the left side. This is especially important when the motorcycle is parked on its side stand and therefore leaning to the left. Mounting a bike from the right side could upset the balance of the bike on the side stand and bring it crashing down on top of you. When mounting the bike, hold the handlebars with both hands and squeeze the front brake to keep the motorcycle from rolling forward. Swing your right leg over the seat, and once you are straddling the bike and holding it upright, use your foot

to retract the side stand. Adjust the mirrors so that you have a good view of the roadway behind you.

## Starting the Engine

**FINE-C** is a useful term to help you remember the pre-start checklist. Run through this checklist before every single ride.

**Fuel** – Turn the fuel supply valve to the on position. Note that many newer motorcycles use an electronic or automatic fuel supply valve, which does not need to be turned on and off manually.

**Ignition** – Insert the key and turn the ignition switch to the on position.

**Neutral** – Shift the transmission to neutral. Check the neutral light (green light indicates neutral) and roll the motorcycle forward or back a few inches with the clutch released to double-check that the motorcycle is not in gear.

**Engine Cut-Off Switch** – Make sure the engine cut-off switch is set to the run position.

**Choke and Clutch** – There are two “Cs” – choke and clutch. Set the choke, if necessary, according to the engine temperature (on for cold starts). Squeezing the clutch lever when you start the engine is a good idea as an added safety precaution. Some newer motorcycles incorporate a cut-off switch into the clutch mechanism that requires the clutch lever to be squeezed in before the motorcycle can be started.

## The Friction Zone

The friction zone is your friend. It's the area of clutch lever travel that starts where the clutch just begins to transmit power from the engine to the rear wheel and ends just before the clutch is fully engaged. Find the fric-

tion zone, get to know it, and spend some quality time there. If you do, stalling your motorcycle will seldom be a problem. The friction zone is the result of partially engaging the clutch. While partially engaged, the clutch slips slightly, allowing you to precisely control the amount of power transmitted from the engine to the rear wheel.

Finding the friction zone and learning to use it well takes practice. With the engine running and transmission in neutral, squeeze the clutch lever and shift the motorcycle into first gear by pressing down on the gear shift lever. With both feet planted firmly on the ground, slowly ease out the clutch lever until you hear the engine begin to slow and feel the bike creep forward. You have now entered the friction zone. Squeeze the clutch lever in, roll back and practice again until you can consistently and predictably locate the friction zone every time you release the clutch.

Be aware that the engine may stall if you do not apply some throttle or if you release the clutch too far. If you feel the engine beginning to stall, just squeeze the clutch lever in again. Using too much throttle can cause the bike to jump forward. It may help to add some throttle as you get more adept at controlling the clutch lever. Proper use of the friction zone and properly modulating the throttle and the clutch to smoothly engage the engine without stalling or jumping forward are the skills necessary to ride a motorcycle smoothly away from a stop.

## Riding Posture

Maintaining good posture is an important and often overlooked component of safe riding. It will help you stay comfortable over long distances and enhance your control of the motorcycle by helping your body stay relaxed.

Sit on the motorcycle in an upright position with your back straight, your head up, and your eyes focused on the road ahead. Ride with your knees and elbows turned inward.

Continued on pg. 25.

## Motorcycle Safety Foundation's Key Messages

- ❑ Get trained and Licensed
- ❑ Wear protective gear – all the gear, all the time – including a helmet manufactured to the standards set by the DOT
- ❑ Ride unimpaired by alcohol and drugs
- ❑ Ride within your own skill limits
- ❑ Be a lifelong learner by taking refresher rider courses





A yellow Honda CBR600F4i motorcycle is parked on a paved road. The motorcycle features black and white graphics, including the Honda wing logo and 'HONDA' text on the fuel tank and side fairings. A rider wearing a yellow helmet and a white jacket is partially visible on the right side of the frame. The background consists of a grassy hillside and a clear blue sky.

**DRESS FOR THE  
FOR THE**





[www.safetycenter.navy.mil](http://www.safetycenter.navy.mil)

**THE CRASH, NOT  
THE RIDE**

Poster idea by AT1(AW) Young, CNATT Atsugi

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They should be comfortably bent—not locked—so you can quickly move or respond to changes in riding conditions. Keep both feet on the footrests at all times so you can quickly position them to operate the rear brake pedal or shift lever. Grip both handgrips firmly with your wrists pointed up. Make a conscious effort to keep your body limber and relaxed. Tensed muscles will cause you to tire quickly and will reduce your ability to respond promptly to any obstacles that might appear in your path. Remember, the better your skills, the more relaxed you'll be.

## Shifting Gears

Most motorcycles are equipped with manual transmissions, which just like manual transmissions in cars, allow you to change gears to match engine speed with road speed. This keeps the engine operating where it's most responsive. Most motorcycles have either five or six gears: The lower gears are used at lower speeds and higher speeds call for higher gears.

As you go faster, you will need to shift your motorcycle into a higher gear. Shift up into a higher gear well before the engine rpm reaches redline, which is the maximum recommended engine speed, as shown on the tachometer. As a rule, shift up soon enough to avoid over-revving the engine, but not so soon as to cause the engine to lug.

Use a three-step process to smoothly upshift into a higher gear. First, simultaneously roll off the throttle and squeeze in the clutch lever. Once the throttle is closed and the clutch is completely disengaged, the second step is to lift the shift lever firmly until it stops, engaging the higher gear. Step three is to smoothly ease out the clutch lever to restore power to the rear wheel, simultaneously rolling on the throttle. Don't forget to drop your foot away from the shift lever, allowing the shift lever to reset to its "home" position.

Downshifting is done either in conjunction with slowing the motorcy-

cle or when you want to quickly raise the rpm and make more power available for acceleration (when passing another vehicle, for example). Downshifting is slightly more involved than upshifting, because you have to work carefully to closely match engine speed to road speed. If you haven't slowed sufficiently, it is easy to over-rev the engine when you shift into the next lower gear. Also, selecting a lower gear and releasing the clutch too quickly (or not rolling on the throttle enough) can have an effect similar to stomping on the rear brake, and could lock the rear wheel and cause it to lose traction. Extra practice at low speeds will help you master downshifting smoothly and consistently.

As with upshifting, downshifting is a three-step process that involves modulating the clutch and throttle to precisely match engine speed with road speed. Begin the downshifting process by rolling off the throttle and squeezing the clutch lever simultaneously. Once the clutch is disengaged and the throttle is closed, shift the

motorcycle into a lower gear by pressing down on the gear shift lever. Once the shift is completed, ease out the clutch lever slowly and roll on the throttle. Again, remember to release your foot and allow the shift lever to reset for the next shift. Shifting to a lower gear can cause an effect similar to applying the brakes. This is called engine braking. To use engine braking to your benefit when decelerating, shift down one gear at a time and ease the clutch lever through the friction zone. Keep the clutch in the friction zone until engine speed stabilizes, then ease the lever out all the way until ready for the next shift.

## Shutting Down

Shifting and stopping a motorcycle can be somewhat complicated tasks, requiring several steps and the careful coordination of multiple controls. This isn't the case with shutting off the motorcycle. It's easy!

After coming to a complete stop, and with your legs firmly supporting the bike, reach up with your thumb



Mount your motorcycle from the left side, holding the handlebars with both hands and squeezing the front brake. To dismount, select a firm, flat surface, squeeze the front brake lever and lower the side stand. Then lean the motorcycle onto the side stand and swing your right leg over the seat.

and move the engine cut-off switch to the off position. Make this your habit, so you can easily and instantly find the engine cut-off in an emergency. Turn off the ignition switch, and, if your motorcycle is so equipped, turn the fuel valve to the off position.

## Dismounting

Select a firm, flat surface on which to park. Be sure the motorcycle is in first gear because this lessens the chance of it rolling while parked. Squeeze the front brake lever and lower the side stand. Lean the motorcycle onto the side stand and swing your right leg over the seat—all while squeezing the front brake lever. Turn the handlebars toward the side stand to enhance stability and engage the fork lock.

## Stopping

Your motorcycle is equipped with both front and rear brakes. To achieve optimum braking performance, both the front and rear brakes must be used in unison. However, because of the way that a motorcycle's weight distribution changes under deceleration, the front brake provides 70 percent or more of the motorcycle's stopping power. It is essential to familiarize yourself with the operation of your

motorcycle's front brake, to learn to trust the front brake, and to use the front brake (in conjunction with the rear) every single time you stop.

To bring a motorcycle to a complete stop, you'll need to use both hands and both feet together. Squeeze the front brake lever and press down on the rear brake pedal at the same time, varying the amount of force depending on how quickly you need to stop. At the same time you apply the brakes, squeeze in the clutch lever and downshift toward first gear. If you wish to use engine braking to further slow down, gently ease out the clutch between downshifts.

Even though the full braking force of each wheel may not be required for normal, planned stops, it is important to get into the habit of using both brakes at all times so you will respond reflexively should a panic situation arise. Remember to pay attention to what your hands are doing in a braking situation: Roll off the throttle when slowing to prevent over-revving the engine; to prevent lugging or stalling when slowing, remember to squeeze the clutch lever.

## Changing Direction

Once you're familiar with the friction zone and have mastered the mechanics of forward motion, the next

skill to learn is turning the motorcycle. To understand the art of changing direction on a single-track vehicle, break down the turn into four basic steps: Slow, look, press, and roll.

**Slow** – Take care of slowing and braking before you enter a turn. Reduce speed before the turn as needed by rolling off the throttle and applying both brakes smoothly and evenly; downshift the motorcycle if necessary.

**Look** – Turn your head and look through the turn. Use your eyes to help with directional control – the motorcycle tends to follow your eyes and go where you're looking. Turn your head, not just your eyes, nor just your shoulders. Keep your eyes up and moving, level with the horizon. Doing all of this together will help you move smoothly through the turn.

**Press** – To turn, the motorcycle must lean. To initiate a lean, press forward on the handgrip corresponding to the direction of the turn. In other words, press left, lean left, go left; press right, lean right, go right. This is called counter-steering and it's how all single-track vehicles, like motorcycles, change direction.

Of course, higher speeds and tighter turns require a greater degree of lean. In normal turns, the rider (and passenger) should lean with the motorcycle into the direction of the turn. In slow, tight turns, lean the motorcycle only and keep your body straight and upright. In very tight turns (a U-turn in a parking lot, for instance), you might actually need to lean your upper body slightly toward the outside of the turn. This technique is called counter-weighting.

**Roll** – Roll on the throttle gently through the turn, maintaining a steady speed or slightly accelerating. Gently rolling on the throttle through the corner will settle the suspension and help to stabilize the bike through the corner. Avoid rapid deceleration in the corner, because it can overwhelm front tire traction. Also avoid rapid acceleration, which can cause the rear tire to lose traction or cause you to run wide in the turn. ■



The top image shows the upshifting technique, using your boot to nudge the shifter upwards. The bottom image depicts a downshift, where the shifter is pushed toward the pavement.



Don't forget to flip up the kickstand! Most modern bikes will automatically shut off if the kickstand is still down when the bike is in gear. If your bike doesn't have this feature, make sure you retract the kickstand by literally kicking it up with your left boot and allowing it to tuck underneath the underbody of the bike.

# He Came Out of Nowhere



**T**oo often, that's what the drivers of four-wheeled vehicles say after a collision with a motorcyclist. Usually, the motorcyclist is not at fault, but that doesn't stop him or her from suffering the consequences. It's a scary thought, but there are things riders can do to be more visible on the roadways and reduce their chances of being involved in accidents.

Defensive driving is a good idea for everyone, but for bikers, it's essential. Remain in full control of your motorcycle at all times and remain constantly aware of your immediate riding environment.

This isn't always easy. Roadways can be chaotic places full of stressed-out, distracted, and exhausted drivers. That said, there are things you can do to remain aware of your riding environment and anticipate what's going to happen on the road ahead. Start by improving your rid-



ing skills to the point where they become second nature, leaving your mind free to concentrate on monitoring your surroundings. Then take active steps to make yourself more visible to other motorists, to position yourself properly in the traffic flow, and to accurately evaluate and respond to potential hazards.

Making yourself visible, gathering visual information, positioning your motorcycle within the traffic flow, reading and evaluating traffic patterns and making predictions—these are the tools that will help keep you off the back end of some unwitting motorist's bumper.

## Visibility

Unfortunately, most motorists aren't looking for motorcycles. Being seen means not only making yourself and your motorcycle visible, but also riding in a manner that clearly communicates your presence and intentions. Here are some strategies to help you accomplish this.

Dress in a way that makes you conspicuous. Choose brightly colored clothing and a light-colored helmet so you stand out. Consider reflective material on your clothing, helmet and even on your motorcycle. This is especially helpful in low-light situations.

Many states require that you ride with your motorcycle's headlight illuminated, even during the day. Even if it's not a law in your state, you should always ride with the light on. This is one of the easiest and most effective ways to stand out in the eyes of oncoming traffic. Most bikes have headlights that automatically come on when the ignition is switched on.

Communication is an important part of visibility. Use

your turn signals when changing lanes and if it's safe, consider using hand signals to further clarify your intentions. Don't forget to cancel your signals after you've completed your lane change. We all know that leaving them on is annoying, but it's also misleading and dangerous.

Signaling is not enough. You also need to double-check with a glance over your shoulder to check your blind spot before changing lanes.

Don't rely too heavily on your horn. It can be a useful tool but many motorcycle horns cannot be heard over traffic noise or surround-sound car stereos.

Even if you dress in canary-yellow and signal your intentions each and every time, there are still going to be instances when car drivers don't see you. That's why you have to drive defensively, anticipate potentially dangerous outcomes, and prepare to avoid them.

## SEEing – Search, Evaluate, Execute

In addition to being seen, actively seeing potential hazards is equally important. Proper seeing goes beyond noticing what is immediately in front of you, and includes everything to the side of you and even what is happening behind you. Scan 360 degrees around you. The key to successful scanning is to always keep your eyes moving. Roving eyes notice more. Your goal should be to scan about 12 seconds ahead of you. This means looking ahead to an area that it will take you 12 seconds to reach. This gives you time to prepare for situations before they materialize immediately in front of you.

Cars, trucks and pedestrians should receive the most of your attention, but don't completely neglect the

**Wearing brightly colored protective jackets or vests will increase your visibility on the road.**



Photo by Dan Steber.

environment you will be passing through, including objects on the roadside and on the road itself. Look for problem spots: Trees can provide shade for damp or icy spots, shadows can hide debris, potholes can spread gravel on the road.

Remain aware of the movement of traffic around you – including behind you. Maintain extra alertness at intersections, where other vehicles might cross your path. Other hot spots include side streets, driveways and parking lots where other vehicles enter the flow of traffic. Pay special attention to children and animals on the side of the road since both can act unpredictably.

## Gathering Visual Information

Almost all of your impressions of the surrounding traffic scene come through visual inputs, so it makes sense that your eyes are your first and best line of defense. To use them as effectively as possible, it helps to know a little bit about how your sight process operates. You have two distinct fields of vision: central and peripheral.

Central vision is what you use to see something clearly. We'll skip the science behind this, but central vision is what you're using to read these words. It's also the type of vision you use to focus on specific elements of traffic, to estimate distance, or to view other specific details on the road.

Peripheral vision encapsulates everything that is visible beyond your central vision. You can't focus directly on things that pop up in your peripheral vision, but it helps you detect items approaching from anywhere other than right in front of you – and in emergency situations, will draw your attention to objects of importance that you aren't presently looking at, like a deer leaping across the interstate or a car swerving from the right. It's important to keep your eyes moving because although your total field of vision is 180 degrees or more, your eyes effectively only use a small portion of this visual field.

As your eyes check out the scene, there's so much to see. The challenge is to filter everything so that your eyes pick up on the important stuff without being distracted by the unimportant things. Distractions and unnecessary fixations are one of the primary dangers faced by riders.

Proper scanning is a systematic movement of your eye over the visual scene. Keep your eyes moving, but with a purpose. Concentrate your vision on your intended path of travel. Don't let your eyes focus for too long or otherwise become distracted by unimportant objects.

Make a concerted effort to keep your eyes up to keep your field of vision open far ahead of you.

Force your eyes to move frequently, so that you receive a wide field of visual information and remain alert to any possible hazards.

## Lane Positioning

Being seen can depend on how you position yourself within the lane and in the flow of traffic. The main idea is to create a comfortable space cushion, separating your-

self and your motorcycle from the other vehicles on the roadway. This will help you see emerging traffic situations more quickly and clearly and will also give you more time and space to respond to any hazards that pop up.

## Lane Placement

There is no one best lane position – the best position is constantly changing depending on traffic conditions. Here are just a few of the considerations that could affect your choice of lane position:

- Increasing your ability to see
- Increasing your visibility to other motorists
- Avoiding other motorists' blind spots
- Avoiding surface hazards
- Protecting your lane from other drivers
- Communicating your intentions
- Avoiding windblast from other vehicles
- Providing escape routes
- Setting up for and negotiating curves

In general, the best place to be in the flow of traffic is near the center of your lane. This position makes you most visible to drivers in front of you, and also leaves a reasonable cushion on both sides for you to respond to any encroachment by surrounding traffic. There are some situations where you'll want to avoid the center of the lane, such as busy intersections, where oil drippings from cars can make this part of the lane especially slippery. In these cases, it might be best to ride in the left portion of the lane. Another time to use the left position is when getting ready to pass. However, there are also times to avoid the left track, such as when riding in the lane to the right of a large truck. The left track would make you less visible to the truck driver and more susceptible to the truck's windblast. In this case, move to the far right edge of the lane, or slow down until you're no longer beside the truck. Avoid riding in another vehicle's blind spot. As it says on the back of most 18 wheelers—if you can't see a driver's face in his mirror, he can't see you either.

## Following Distance

The general rule, on good road surfaces in ideal conditions, is to maintain a minimum two-second space cushion between yourself and any vehicle in front of you. Two seconds of space should allow enough time to respond accordingly if the vehicle ahead makes a sudden stop.

But how do you know how much space equals two seconds? A technique called "fixed-object count-off" can help. Pick a fixed object ahead of you, such as a street sign, a light pole, or a painted roadway line. As soon as the vehicle in front of you passes the object, start counting. One-thousand-one, one-thousand-two ... If you haven't yet reached the fixed object by the time you finish your second count, you've left enough distance to meet the two-second minimum. Remember, two seconds is the minimum. There's no law saying you can't maintain a greater distance. ■

# T-CLOCS

T-CLOCS, refers to Tires and Wheels, Controls, Lights and Electrics, Oil and Other Fluids, Chassis and Chain, and Stands.

**E**ven the most careful and conscientious rider can't ride safely if his or her machine is one bump away from falling apart.

Proper care and maintenance of your motorcycle requires frequent attention. Attending to every aspect of your motorcycle's well-being and making sure that all its components and systems are maintained in proper working order will go a long way toward allowing you to ride confidently. The reliability of modern-day machines has made getting stranded on the roadside an increasingly rare event, but any motorcycle can develop problems. Usually, you can discover a potential problem developing and have plenty of time to fix it before it leads to a crisis on the highway.

Lots of bikers come to really love their motorcycles in a way that few four-wheeled drivers ever experience. They lavish them with care and attention. Even if your feelings about your bike don't run that deep, regular maintenance and preventive care are crucial. To help you through a quick and easy pre-ride inspection of critical components and systems, the Motorcycle Safety Foundation recommends using the acronym T-CLOCS, which refers to Tires and Wheels, Controls, Lights and Electrics, Oil and



Proper tire pressure will promote better handling and long tire life.  
Photo courtesy of the Motorcycle Safety Foundation.

Other Fluids, Chassis and Chain, and Stands.

## Tires and Wheels

T stands for tires and wheels, perhaps the most important components of a motorcycle with regard to safe riding. The small contact patches provided by the front and rear tires are the motorcycle's only source of traction. Even

the slightest compromise of quality or condition of your tires can be enough to overwhelm this contact patch and bring a good ride to a bad end.

Check the air pressure in your tires regularly, and adjust it according to the manufacturer's recommendations. Maintaining proper air pressure is important for tire life and tire performance. Incorrect pressure can lead

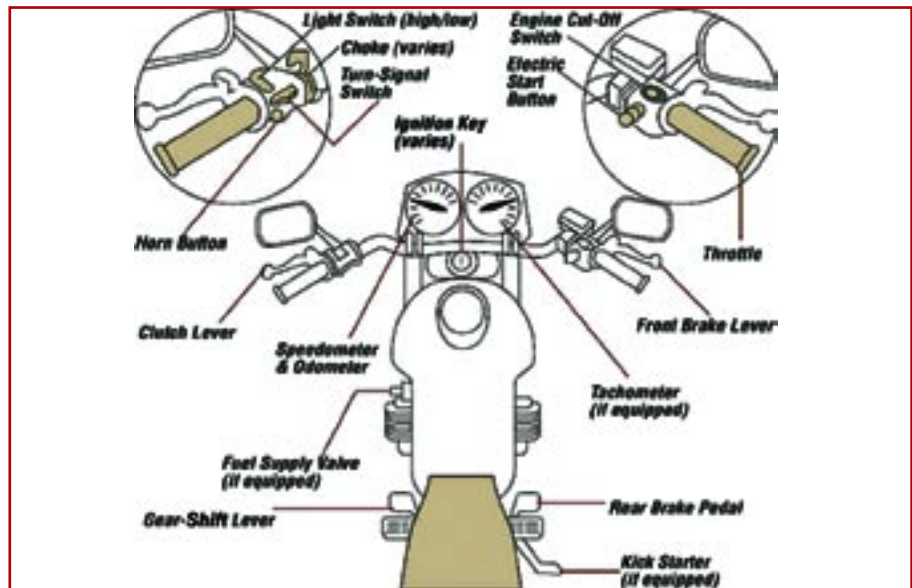


to uneven tire wear. Low pressure can cause excessive heat buildup or instability – especially at high speeds or when carrying heavy loads – and can affect available traction. If, under normal loads and operation, a tire needs air added every time you ride, you should assume there is a small puncture, slow leak, or other problem that can cause a failure. Take care of this ASAP.

Regularly inspect the tire tread depth to ensure that adequate tread remains. Most modern tires have small wear bars molded into the tread grooves. When these wear bars are exposed, the tread is worn out and the tire should be replaced. Although it may look like enough tread remains, it won't be enough to maintain traction in wet conditions, and worn tires are thinner and easier to puncture.

Flat tires happen to everyone. There's no sure way to predict when you might run over a nail, but you may be able to spot other signs of impending tire failure or blowout. Before each ride, take a moment and glance over the tires' tread for any evidence of wear, cuts, embedded objects, bulges, or weathering.

While inspecting the tires, put the motorcycle on its center stand or otherwise raise the wheels securely using a shop stand or jack so that they can spin freely. Check the wheels as well. Most modern motorcycles are equipped with cast-spoke wheels. Make sure that these wheels are free of cracks or dents, especially at points where the spokes join the rim and along the bead (outer edge) portion of the rim. If your bike uses spoked wheels, periodically check to make sure the spokes remain tight. Regard-



Controls includes all levers, cables, hoses and the throttle. It's important to maintain these systems to ensure your bike does what you want it to do.

less of the type of wheel, make sure the rim is straight and round.

While the wheels are up and off the ground, check the wheel bearings for wear by grasping the tire at the top and bottom, then pushing and pulling on it. There should be no free play or audible noise from the hub or axle. Inspect the bearing seals for cracks or discoloration.

Inspect the brakes as well. Make sure that the calipers are mounted securely to the forks in the front and the swingarm in the rear. Spin the wheels to confirm that the rotors pass freely through the calipers without dragging, which might indicate a worn or stuck piston, a warped rotor, or other problems with the braking system. Check the brake pads or brake shoes for wear.

## Controls

C stands for controls: the levers, the throttle, and all the cables and hoses associated with the motorcycle controls. You use these to communicate with your motorcycle, and it is important to maintain these systems in order to ensure that your bike responds quickly and correctly to your inputs.

Start your inspection with the levers. Make sure they are tight in

the mounts but still pivot freely, and make sure the levers are not cracked or bent. A bent lever might restrict the available travel of that lever, possibly preventing complete engagement of the clutch or brakes. Also inspect the cable ends, looking for signs of fraying. Look carefully at cable routing and make sure there are no kinks. Control cables usually fray before breaking completely, and catching a frayed cable ahead of time can keep you from being stranded on the side of the road. A rough or gritty feel at the lever can be a warning sign that the cable it is attached to is beginning to fray. Also look at the cable ends, which occasionally come off unexpectedly. If you are touring long distances, it might be a good idea to carry spare cables in case one breaks. Spare cables are cheap compared to the expense of being stranded.

Pay special attention to the throttle cable routing, to make sure that it doesn't pull when the handlebars are turned. The throttle should rotate freely on the handlebars and snap closed when it is released. Most modern motorcycles are equipped with two throttle cables – a second cable pulls the throttle closed, and both of these cables need to be working. If you notice

the throttle sticking open, try to close it manually. If closing the throttle manually works, you will need to service that second cable so that the throttle automatically snaps closed when the grip is released. If the throttle should stick while you're riding, you'll have to use the clutch and brakes to control your speed as you safely maneuver out of traffic to where you can stop and shut down the engine using the engine cut-off switch.

Most disc brakes are hydraulically actuated and use hoses instead of cables. Make sure to inspect these regularly for cracks, cuts, leaks, bulges, chafing, or other deterioration. When you are checking out the brake levers and hoses, it's also a good time to check the function of the brake light switches. Make sure the brake light illuminates when the front brake lever is squeezed in, or the rear brake pedal is pressed down.

## Lights and Electrics

L is for lights and electrics. Electrical components are relatively sensitive to vibration and weather, which makes it important to inspect these systems regularly. Electrical failures can be particularly difficult to diagnose or deal with along the side of the road, so this maintenance is essential.

Your headlight should work properly and be aimed correctly on both-low and high-beam settings. The same applies to your brake and taillight. Make sure the brake light illuminates with both the front brake lever and rear brake pedal. Regularly check the function of your other electrical switches, including turn signals, horn, and engine cut-off switch, to make sure that these are working the way they should. Inspect all electrical wiring for cracks, fraying, mounting, and chafing of the insulation. Look out for disconnected or broken wires and repair them when necessary.

Your bike will not run without electrical current, so keep the battery fully charged and properly serviced. If you don't ride very often, or if you



Your headlight should work properly and be aimed correctly on both-high and low-beam settings.



The oil in most street bikes lubricates the engine as well as the transmission, so it's doubly important to make sure the oil level is correct. On newer bikes, this is easily done through the sight glass, pictured above. The sight glass typically features low and high marks. Photo courtesy of the Motorcycle Safety Foundation.



Keep the chain at the proper tension and alignment (refer to your owner's manual) and lubricate it often. Photo courtesy of the Motorcycle Safety Foundation.

store your motorcycle during a deployment, you may want to invest in a trickle charger to keep the battery in fully charged condition.

Many new motorcycles are equipped with sealed, maintenance-free batteries. If yours is not, and still uses a serviceable battery, make sure to check it frequently and keep the electrolyte level topped off. Regardless of the battery type, keep the terminals clean and tight and make sure the battery leads and grounds also remain clean and tight.

### Oils and Other Fluids

O refers to oil and other fluids. Always keep the engine oil filled to the proper level and change it at regular intervals, according to the manufacturer's recommendations as detailed in your motorcycle owner's manual. Changing the engine oil is probably the most important service that you can perform on your motorcycle for engine longevity. After a few thousand miles of use, the molecules in motor oil break down and the oil loses its ability to properly lubricate the en-

gine parts. This is important because in a motorcycle engine, the engine oil also lubricates the transmission and clutch. The added stress of lashing gears and the additional heat caused by the clutch puts additional strain on the oil molecules, making regular oil changes that much more critical.

Engine failure occurs in times of especially high stress – over-revving, overloading, or when vital lubricants run too low or are too old and worn out to do the job. Fortunately, engine failure almost never occurs unannounced. Usually, there are symptoms, such as poor starting, sluggish throttle response, and unusual noises. In addition to engine oil levels, also check all engine surfaces and gaskets to catch any oil leaks. Don't forget to check the levels of brake fluid and any other hydraulic fluids as well.

If your motorcycle is liquid cooled, inspect the coolant level at the reservoir or recovery tank. Be sure to check the radiator and hoses for cracks or other signs of leaks or potential failures. Don't neglect your fuel system. Replace your fuel filter regularly be-

fore it becomes clogged with dirt. If your bike has a fuel valve (petcock), it should turn from on to reserve to off/prime smoothly. A leaky petcock will allow fuel to flow into the carburetors and possibly overfill or flood them. If the O-rings inside the petcock are particularly degraded, some bikes may even leak if it is left in the off position.

### Chassis and Chain

The second C in T-CLOCS refers to chassis and chain. Inspect the frame to look for cracks or other signs of trouble. Raise the front wheel off the ground and move the handlebar from side to side, checking to make sure that the forks move freely and easily, without any evidence of side play or any knocking noises. Raise the rear wheel and inspect for signs of play in the swingarm by pushing and pulling on the rear wheel. Once both ends are back on the ground, check the suspension for smooth movement. Pay special attention to fork and shock seals to make sure that no hydraulic fluid is leaking out.

The vast majority of motorcycles use chain drive, and motorcycle

**Before you launch, your preflight  
should include your PPE,  
your machine,  
and your plan.**







Make sure the side and center stands retract fully out of the way when riding.

drive chains require frequent attention in order to provide long life and optimum service. Keep the chain at proper tension and alignment, and refer to your owner's manual for instructions on how to adjust this system properly and how often to perform the inspection. Depending on riding conditions, you may need to lubricate the drive chain often, as well. Lubricating the chain is best done at the end of a ride while the chain is still hot. The heat will help the lube penetrate the links better. When applying the lube, direct the stream between the plates and roll-

ers, not down the center or against the sideplates.

A badly worn chain is much more likely to break or derail than one that is properly maintained, and a broken chain can do serious damage to the engine cases or swingarm, not to mention potentially locking the rear wheel and possibly causing a crash. Proper chain maintenance is vital. You'll want to inspect the sprockets for wear, as well. Look for hooked or broken teeth, and make sure that the rear sprocket remains securely attached to the rear hub.

Replace your chain when you

can pull it away from the rear sprocket and expose more than half a tooth; if it is rusted, pitted or cracked; if it has numerous kinked "tight spots"; or if the rear axle adjusters have reached their farthest limits. If you are unsure of your chain's condition, see your dealer's service technicians for advice.

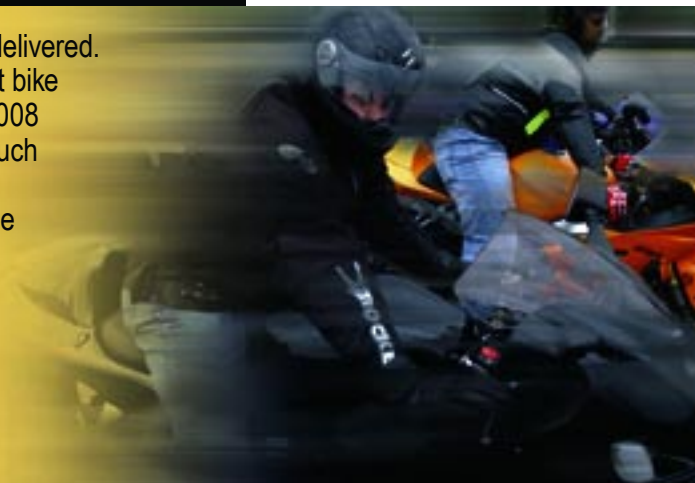
Motorcycles that use belt or shaft final drives are usually lower-maintenance than chain-drive units, but these are by no means maintenance-free. Just as you would with a chain, regularly inspect the belt to look for cracking, fraying, missing teeth, or other evidence of impending doom. On shaft-drive bikes, watch for leaks at all seals or contact points, and make sure the fluid levels remain at factory specifications.

## Stands

S is for stands, including the side stand and the center stand. (Not all motorcycles are equipped with center stands.) Make sure the side and center stands both retract fully out of the way when riding. Hanging stands can easily catch the pavement when leaning into a corner and cause you to wipe out. To prevent this situation, many modern motorcycles are equipped with an engine cut-off that prevents the engine from running if the stand is down while the transmission is in gear. ■

## Military Sport Bike Course Coming Soon!

Because you asked for it, the Navy and Marine Corps delivered. A new motorcycle course designed specifically for sport bike riders is coming your way. Courses will begin June 1, 2008 for those of you stationed in fleet concentration areas such as Norfolk, Jacksonville, Fla., Cherry Point, N.C., San Diego, Washington state and various locations in Europe and Japan. The course focuses on the handling and maneuvering characteristics specific to lightweight, high performance machines and will soon spread across the globe. Check your local safety office for details or contact the Naval Safety Center at 757-444-3520 Ext. 7180 or 7135.



# Personal Protective Equipment

## Dress for the Crash

**H**ave you ever seen a star NFL wide receiver jump up to catch a pass, only to be immediately pummeled by a 300-pound linebacker with bone-jarring speed and power? Now imagine he took that hit without wearing any protective padding. Pro ball players wouldn't dream of taking that kind of risk. Riding motorcycles also requires protective equipment and failure to wear it isn't just reckless, it's stupid. Many experienced riders say it's not a question of if, but when you will be involved in some type of accident. Most are minor, but even minor inci-

dents can be deadly without the right protection.

Proper riding gear for riders and passengers should include, at a minimum, over-the-ankle boots, long pants, a riding jacket, full-fingered gloves, eye protection, and—above all—a helmet manufactured to meet U.S. Department of Transportation standards.

Protective riding gear is particularly important for motorcyclists because of their increased vulnerability. Unlike automobile drivers, who are surrounded by a steel cage, motorcyclists are completely exposed to the elements: hot and cold weather, rain,

stones and other road debris, and even bugs. All of this can negatively affect your comfort and safety on the road, but proper riding gear minimizes this discomfort and danger, and can also save your life in the event of a crash or fall.

### Helmets

It's impossible to overstate the importance of wearing a helmet each and every time you ride your motorcycle. Your skull is no match for the pavement, even at a slow speed. Helmet technology and design have made helmets lighter, more aerodynamic, better ventilated and more comfort-





Proper PPE includes an approved helmet, bright-colored jacket, full fingered gloves, and over-the-ankle boots.

## Even minor incidents can be deadly without the right protection.

able than ever. While most states have mandatory helmet laws, other states consider it a matter of personal choice. Regardless of what state you are riding in, ALL NAVY AND MARINE CORPS motorcyclists are required to wear helmets, on or off base, every single time.

### *Choosing the Right Helmet*

Try before you buy. This is essential since every head is shaped differently and every type of helmet shell has a slightly different shape. Properly fitting the helmet is important. A properly fitted helmet won't irritate your head or

slip and move on your head when fastened. Fit is important for both comfort and safety.

Modern helmets come in three basic styles: Full-face helmets, three quarter or open face helmets, and partial coverage, or half helmets. A full-face helmet offers the highest level of protection, providing coverage for all of

your head, including your chin and jaw. A movable face shield protects your face from

wind and debris and can be easily opened with one hand to provide access and additional ventilation. A three-quarter helmet is constructed from the same basic components but

doesn't offer the face and chin protection of full-face helmets. Half helmets are similar to three-quarter versions but expose more of the lower jaw, sides, and back of your head.

Some riders find half and three-quarter helmets more comfortable and less restrictive, but it is important to note that these helmets offer less protection than full-face versions.

### *Standards and Ratings*

There's really only one thing to keep in mind when it comes to effective motorcycle helmets. Make sure there's a DOT or Snell certification sticker somewhere on the inside or outside of the helmet. This signifies that the helmet meets or exceeds all relevant safety test standards of the Department of Transportation and/or the Snell Memorial Foundation, a private helmet testing group.

### *When to Replace a Helmet*

Helmets are designed to take the damage that your skull would oth-

erwise sustain in a crash. Therefore, even after a single impact, it will lose effectiveness and should be replaced. Aside from impacts, age can also affect a helmet's ability to protect. Repeated use can compress the comfort fit liner, and ultraviolet rays can break down the outer shell. It's a good idea to replace your helmet every few years because helmet technology continues to advance. Regularly upgrading your helmet will keep you outfitted with the best possible protective gear.

### **Footwear**

Over-the-ankle boots provide the highest level of protection for the feet, ankles, and shins, and are least likely to come off in a crash. Sturdy boots will protect your feet from stones and other road debris kicked up from the highway, can protect you from burns caused by hot exhaust pipes, and will help you operate the shift lever and brake pedal more effectively. Rubber soles provide good grip on the pavement when you're stopped and will help keep your feet on the footrests while riding. Boots come in street riding (touring) and competition (racing) styles. Street riding boots usually include some padding over the toe, ankle, heel and shin areas, and are engineered for comfort and style off-the-bike as much as for protection during a crash. Racing boots are designed for maximum protection and usually feature hard armor over the toe and other critical areas. They are usually quite rigid for support, and as such, can be uncomfortable when walking around off the bike.

### **Gloves**

A good pair of motorcycle-specific gloves performs several functions: providing protection from sun, wind and cold; helping to maintain a secure hold on the handgrips; and in the event of a crash, minimizing cuts, bruises and other damage to your hands.

Gloves are available in a variety of styles, ranging from lightly padded models to racing types with



**No one is  
aiming a lance at  
you, but you still  
need your armor.**



Cartoon by Ricardo Nunes.

hard-plastic armor covering all possible contact points. Obviously, a fully-armored racing glove is going to provide the best protection, but something like this might be uncomfortable for daily use. Lightly padded gloves provide more freedom of motion while only sacrificing a minimum of protection. Choose the type that is most suitable for your intended use.

No matter which type you choose, it's important to get a good fit. An overly bulky glove will make it difficult to operate the motorcycle's controls. Gloves that are too tight will restrict circulation and cause your hands to lose feeling or be overly sensitive to temperature. A good-fitting glove should be snug, without restricting circulation or movement.

Make sure your gloves have a secure strap system to keep them on in the event of a crash. Gloves are available in different weights for different seasons.

### **Clothing**

Motorcycle clothing has become a high-tech industry. Your goal when shopping for motorcycle clothing

should be comfort, protection, and visibility—in that order. Just as there are different types of motorcycles geared toward different sorts of riding, there are different types of motorcycle clothing geared toward different sorts of riding.

Once you've determined what style of jacket and pants to buy, it's time to explore the features. First, consider what material to select—leather or textiles. In general, leather offers better abrasion resistance and breathability, while textile garments are more weatherproof and better in cold temperatures—not to mention the fact that they're usually cheaper than leather.

More important than the material is the fit of the protective garment. The fit determines both the comfort and protection. Fit varies from person to person and application to application, making it essential that you try before you buy. Make sure that your riding clothes fit snugly—more so than other clothing you're accustomed to wearing.

Not only must the gear fit well, but it also must fit in the riding position. For example, the fit of a

sport jacket is tailored for a sport-bike riding position. This is critical, because if the front of a jacket is too long, when you lean over on the bike, it will push the shoulders up. If the back is too short, it will pull up and expose your back. Therefore, on sport jackets, the front is cut shorter than the back, which feels all wrong walking around the showroom but makes perfect sense when you sit on the bike.

Choose brightly colored clothing to make yourself more visible. If you wear dark clothing, consider a reflective vest over your jacket. It's also a good idea to affix reflective tape to garments you wear when riding.

### **Hearing Protection**

This last piece of PPE is often forgotten, but whenever you ride, even on a quiet motorcycle with a full-face helmet, your ears are exposed to wind noise. Long-term exposure can cause irreversible hearing damage. Properly worn hearing protection can reduce wind and engine noise and allow you to hear important sounds like car horns and sirens. There are a variety of styles to choose from. ■



# It's a Group Thing!

**W**hen we think of motorcyclists, the romantic movie image of a strong, silent loner often comes to mind. Get real. Bikers are social animals! Motorcycle clubs have sprung up all over the place, and group rides have become increasingly popular. Many enjoy riding as part of a small group, or even in a large, organized rally. This can be a great way to share your love of motorcycling with like-minded people, but it does bring a few new challenges because you're constantly watching and interpreting the people riding with you, as well as watching the road.

Group rides can be categorized into three basic types: destination-oriented rides, route-oriented rides, and benefit-oriented rides. A destination-oriented ride focuses on a specific place, like a restaurant. Route-oriented rides tend to be more free-form, usually without a fixed timetable, endpoint, or plan, and is organized only for the joy of riding together. This type of ride is ideal for small groups of



similarly matched riders. Benefit-oriented rides are usually organized to raise money for a charity or other special interest group. These rides are typically large in scale, with plenty of publicity.

There's no room for egos when you're on the road with other people. You must take into account the needs and abilities of the other riders – especially their riding experience, skill levels, and general comfort on the road and around other motorcycles. Everything from where to position your bike on the roadway to effective communication takes on a larger significance when you're riding in close proximity to others.

### Arrive Prepared

Nothing will annoy your group more than waiting for you to get your act together. Arrive on time with a full tank of gas and everything you will need to complete the ride. Introduce yourself to the group leader and also the sweep rider, who brings up the rear. If there's a route map, study it and make note of any fuel, meal, rest, or lodging stops. Ask what hand signals will be used during the ride and remember to use them. Riding in a group can be overwhelming, but preparing properly will help you avoid problems.

Resist the temptation to show off! Most likely, you'll only end up looking like a dope, and you could put others at risk. Ride responsibly and impress others with your cool head and self-control.

### Riding in Formation

A group's riding formation on the road plays a huge

part of maintaining safety during a group ride. The staggered riding formation includes maintaining a proper space cushion between motorcycles so that each rider has plenty of time and space to maneuver and to react to any hazards that may come up.

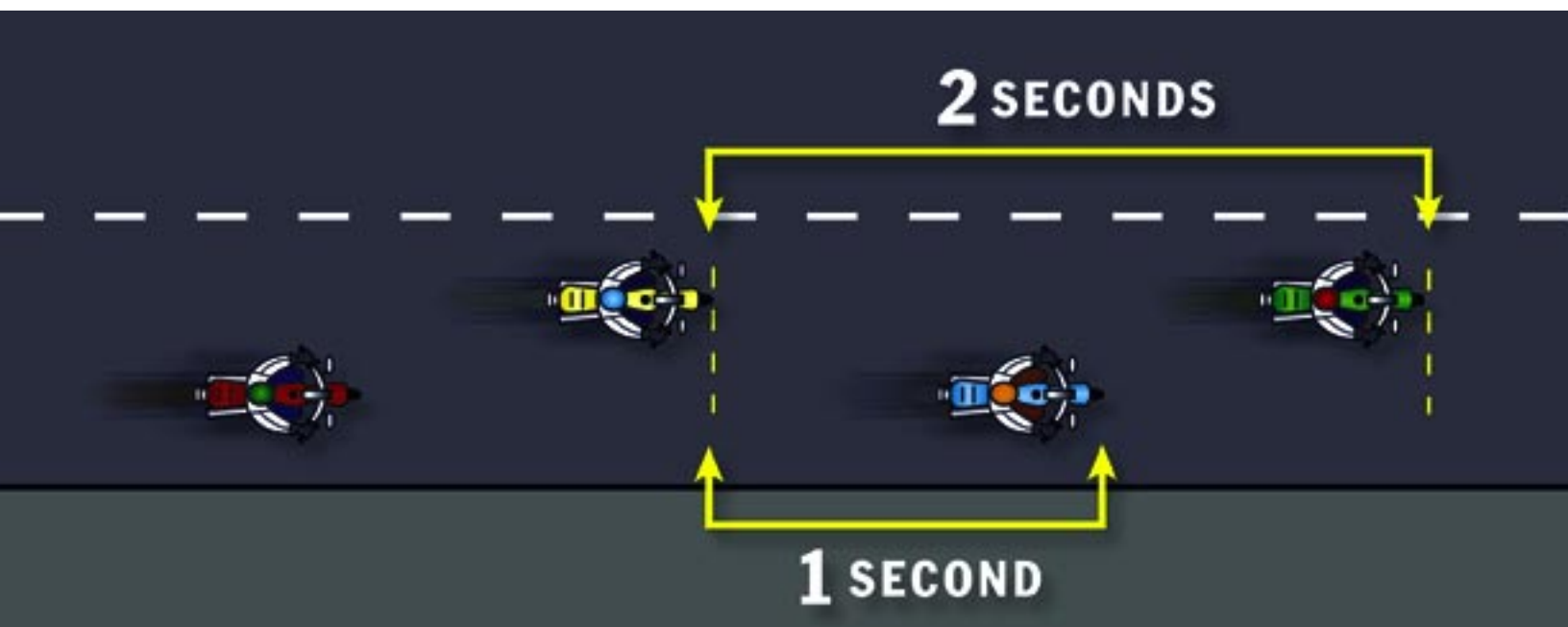
Compared to a single-file line, a staggered formation takes up less space on the highway, is easier for cars to see, and protects the lane better to lessen the chance of the group being split up by other traffic. Side-by-side formations are never a good choice, as these greatly reduce the space cushion to the side. If the guy to your left wipes out, chances are good you will, too.

A staggered formation can be tight or loose, depending on traffic. During heavy traffic, a tighter formation is best, keeping riders together with traffic. However, keeping the group together isn't as important as safety.

In good riding conditions, you should keep a two-second following distance between you and the rider directly in front of you. In a staggered formation, the leader rides in the left third of a lane, while the next rider stays at least one second behind in the right third of the lane, with the rest of the group following in the same pattern behind. If you're doing it right, the third rider is two seconds behind the leader, but only one second behind the second rider.

In some situations, a single-file formation is best. If you need more room to maneuver, such as on a curvy road, or under poor visibility conditions, entering or leaving highways, or on roads with poor surfaces, it's a good idea to ride single file.

No matter what formation you're riding in, pay attention to the riders in front of and behind you. Periodically





check the riders following in your rearview mirror. If you see someone falling behind, slow down and allow them to catch up. Think of the group as a rubber band – the line of riders may stretch out or tighten up from time to time, but overall, if everyone uses this technique, the group should be able to maintain a fairly steady speed without anyone feeling pressured to ride too fast to catch up.

## Intersections

They can be deadly – whether or not you're with a group. At least you have increased visibility when riding with others, but there are important things to remember about intersections when you're part of a pack.

When turning at intersections with traffic light turn arrows, tighten the formation to allow as many riders as possible to pass through while still maintaining a single file or tightly staggered formation. Unfortunately, if your group is more than a few bikes strong, there's a good chance some will be caught by the red light. Discuss beforehand what to do if you're separated by a light. Plan to stop at a predetermined point up ahead to keep riders from feeling pressured to run the light or speed to catch up.

At lights without a turn arrow, proceed with caution and in single file, turning only when it's safe and legal. Lead riders should slow down after turning to allow the group

to reform after everyone is safely through the intersection. Remember – blocking an intersection without permission or without an appropriate escort is illegal in most circumstances.

At red lights where you intend to proceed straight through without turning, it may be appropriate to close formation and sit side-by-side while waiting to proceed. When the light turns green, the rider on the left leaves first, then the following riders, in order to reestablish the staggered formation and space cushion as the riders depart.

## Interstates and Freeways

High speeds and the increased potential for hazards make riding in a staggered formation essential on freeways and interstates. Enter these roadways single file and form up after safely merging. Once on the highway, be alert for entering and exiting cars that might cut through your formation. You might be tempted to close up your formation, but resist this urge and maintain your space cushion. Exiting an interstate requires a single-file formation that allows you to better merge and respond to whatever is at the end of the exit lane.

## Passing

Group passing dynamics differ, depending on the type of roadway. Whether on a freeway or interstate, it's



Photo by Master Sgt. Jim Varhegyi, USAF

acceptable for the group to pass as a unit, provided this pass is safe and legal. When the opportunity arises, the lead rider should signal the lane change once it has been determined that the group can pass as a unit. The other riders should then follow this lead and signal one at a time and move into the next lane.

Passing slower-moving traffic on a two-lane roadway presents a greater challenge. In this situation, the members of the group should pass one at a time. The leader should signal his or her intention first and then pull out and pass only when it's safe. After the pass is completed, the leader should return to the left lane position and continue at a speed that leaves room for the next rider to tuck in between him or her and the vehicle being passed. The next rider should then move up to the left position and wait for a safe chance to pass – each rider should only pass when it feels safe.

### Separation Anxiety

Signals, traffic and mechanical problems are only a few of the reasons that you might find yourself separated from the group. Don't panic! Your group should have a pre-planned procedure in place to regroup. Don't feel pressured to catch up, especially if it means breaking the law or riding beyond your skills. It's always preferable to finish a group ride alone than to wind up in trouble.

If you have plans to separate from the group before the end of the ride, make sure to notify the group leader in advance. Make sure the rest of the group knows when you

plan to depart, so they know you haven't had a problem and aren't in need of assistance. When you do depart, the rest of the riders should adjust the formation to maintain the proper space cushion and following distance. This may require some riders to change their position to the opposite side of the lane.

### Trouble!

Reacting to hazards in the roadway is especially important in a group. For this reason, maintaining the proper space cushion and following distance throughout the ride is essential to allow riders to adjust their lane positions if you encounter debris. If your staggered formation comes across a hazardous area, such as a construction zone, it is best to transition to single file. Avoid riding over debris unless there's no other choice. Not only could you damage your tires or bike, but you also risk throwing debris into another rider's path. Not cool.

If a group member does have a problem with roadway hazards, the riders behind should stop, including the designated sweep rider at the back of the pack. It's best for the riders ahead of the incident to continue on to the next scheduled stop area, since turning around and doubling back could cause additional problems. It's the responsibility of the sweep rider to assess the situation and, if it appears there will be a delay, send another rider ahead to inform the rest of the group. If medical assistance is necessary, use a cellphone to call 911 right away. ■



Photo by A1C James Bell.

# Know Your Group Ride Hand Signals

Stop - arm extended straight down, palm facing back.



Slow Down - arm extended straight out, palm facing down.



Follow Me - arm extended straight up from shoulder, palm forward.



Speed Up - arm extended straight out, palm facing up.



You Lead/Come - arm extended upward 45 degrees, palm forward pointing with index finger, swing in arc from back to front.



Single File - arm and index finger extended straight up.



Double File - arm with index and middle fingers extended straight up.



Hazard in the Roadway - on the left, point with left hand; on the right, point with right foot.



Pull Off - arm positioned as for right turn, forearm swung toward shoulder.



Highbeam - tap on top of helmet with open palm down.



Fuel - arm out to the side, finger pointing to tank.





# Types of Motorcycles

**Street Motorcycles** – These are motorcycles designed for paved roads. They feature smooth tires with a light tread pattern, and most are capable of speeds up to 100 mph.

**Cruisers** – These motorcycles mimic the style of American machines from the 1930s to the early 1960s, although they have benefited from advances in metallurgy and design. The riding position always places the feet forward, and usually the hands are up and the spine erect or leaning back slightly. Some riders find this more comfortable for long-distance riding. Some cruisers may have limited turning ability because of low-slung design.

**Sport Bikes** – Sometimes called performance bikes or “crotch rockets,” sport bikes are typically much smaller and lighter than cruisers and are essentially consumer versions of the motorcycles used in production-based forms of motorcycle sport road racing. The bikes are designed to emphasize speed and handling. The riding position places the feet toward the back, the hands low, and the spine inclined forward. Sport bikes are capable of high speeds, with great stability in corners. They can be difficult to manage by the inexperienced.

**Touring Bikes** – Although any motorcycle can be equipped for touring, manufacturers have created specific models designed to address the needs of long-distance touring and commuting riders. Touring bikes typically

have large wind screens, offering greater protection against wind and weather, large capacity fuel tanks, and a more relaxed, upright seating position than sport bikes.

**Naked Bike** – Also known as a standard, or street bike, this is the basic motorcycle stripped down to its fundamental parts. The emphasis is on function, performance, and ergonomics, rather than aerodynamic body panels and exaggerated riding positions common on sport bikes. These bikes are good for beginners, since they don’t have much plastic to get scratched up in falls.

**Scooter** – Motor scooters are similar to motorcycles and are also designed to be ridden on the road. Scooters usually have smaller wheels, automatic transmissions, small engines, and a step-through configuration, allowing the rider to sit with both feet on a running board and knees together. Scooters are seen all over the roads of European countries.

**Off-Road Bikes** – There are several different types of off-road motorcycles designed and specialized for specific functions. They are typically light weight and have smaller engines than road-going bikes. They have high ground clearance and a simple, rugged body construction. Their large wheels have knobby tires, often clamped to the rim with rim-locks. Off-road motorcycles are usually specialized for a variety of off-road motorcycle sports. ■

# Takin' It Off Road

**I**f you're already an off-highway motorcycle enthusiast, you know all about the fun and excitement of riding on dirt, instead of pavement. Your motorcycle is designed for many types of off-road conditions, but it's really only as capable as you are.

As your riding skills increase, so will your sense of pride, satisfaction, and enjoyment.

## There are three basic types of off-highway motorcycles:

**Dual Purpose** motorcycles come equipped with highway-approved lighting and turn signals, Department of Transportation (DOT)-approved tires, a U.S. Forest Service (USFS)-approved spark arrester, and conform to Environmental Protection Agency (EPA) noise and exhaust emission standards. These motorcycles are designed for use on paved roads, as well as off-highway.

**Enduro** models usually have less complete or no lighting, have knobby tires, and meet EPA noise standards and USFS spark arrester requirements. Enduro motorcycles are for off-highway use only.

**Motocross** models have no lighting equipment, do not meet EPA noise or emission standards or USFS spark arrester requirements. These are high-performance motorcycles designed for use by highly-skilled riders in closed-course competition. Unmodified, they cannot legally be ridden on public land.

If you've just purchased your dirt bike, you're probably anxious to take it for a test run. Before you do, make sure you and your machine are prepared. Part of being prepared means wearing the proper personal protective equipment. This is largely the same gear you would wear when riding a street bike, but if you're not wearing a full-face helmet, you should also wear mouth protection. You can get pants with kneepads and jerseys with chest and shoulder protectors for extra off-road protection.

Before you ride, make sure to give your bike a pre-ride inspection. Also, carry a tool kit with you. Include a few spare parts, such as a spark plug or two, a couple of chain master links, some wire and tape, and possibly a headlight bulb. Carry emergency items, such as a strong tow rope, drinking water, emergency tire-repair kit, weatherproof

matches, a bit of food, and a first-aid kit.

When you're ready to hop on and hit the trails, make sure you know the land you're riding on and what your machine can do. Stay on existing trails and away from dangerous slopes and impassable swamps. Watch for sharp bumps, holes, ruts and other obstacles, and be able to identify muddy, sandy, rocky, dusty, and wet conditions, so you can adjust your speed and riding style accordingly.

Learn to read the terrain as you ride. Look well ahead on the trail, so you know what's coming and are prepared to react long before you get there. Stay alert at all times, and know how to adjust your speed to trail conditions and visibility.

You will encounter some tough situations, such as climbing a hill. Some hills are just too steep, so use common sense. When approaching a hill, keep both feet firmly on the footrest, shift into low gear, and speed up before ascending the hill. For small hills, shift your body weight forward. For steep hills, stand on the footrests and lean well over the front wheel in order to shift as much weight forward as possible.

If the hill is too steep and you must downshift to prevent stalling, shift quickly and smoothly.

When going down a hill, keep your feet firmly on the footrests, point the bike directly downhill, transfer your weight to the rear, shift into low gear, and apply brakes to reduce speed.

Part of the fun of trail riding is closely spaced bumps that create a roller coaster effect when riding up one bump and down the next one. Approach these at a slow or moderate pace, use your arms and legs as shock absorbers, and establish a good rhythm over the bumps. Advanced riders can modify this to stand on the footrests with their weight rearward. This allows the front wheel to skim over the bumps.

If you find yourself in water or mud, your brake application will have to be much more gradual to avoid slipping and sliding. Dry the brakes after a deep-water crossing by applying light pressure to them while riding until they return to normal.

These are only a few of the conditions you will face off-road. The Motorcycle Safety Foundation offers a one-day course that is fun and informative. Visit [www.dirtbikeschool.com](http://www.dirtbikeschool.com) for more information. ■

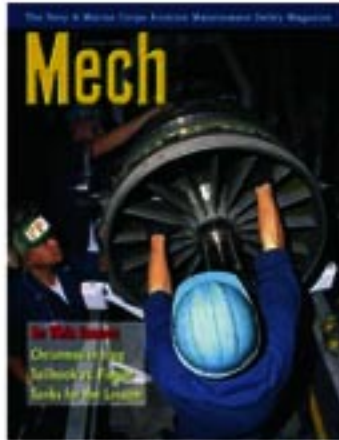




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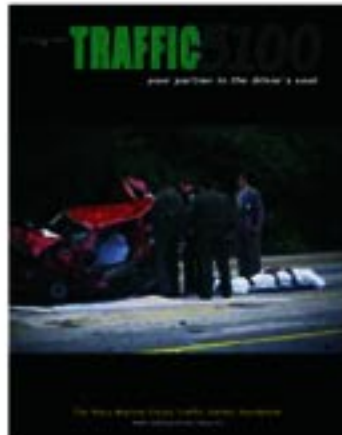


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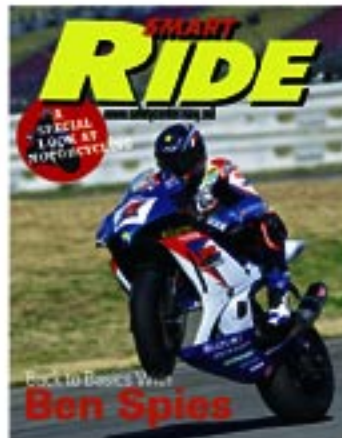
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